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HUGO GERNSTBACK
Editor

February



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By A. L. Burkholder

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"The Magazine of Prophetic Fiction"



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• ON THE COVER

This month we see a lively scene of interplanetary intrigue from the exciting little story of A. L. Burkholder—"The Mad World." The cover is painted by the inimitable Paul.

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A FEW WORDS AS TO THE PURPOSE OF THE LEAGUE

The SCIENCE FICTION LEAGUE was founded in February, 1934. The Executive Directors are as follows:

Forrest J. Ackerman, Eando Binder, Jack Darroch, Edward Hamilton, David H. Keller, M.D., F. Schuyler Miller, Clark Ashton Smith, and E. F. Starzl. Hugo Gernsback, Executive Secretary, Charles D. Hornig, Assistant Secretary.

The SCIENCE FICTION LEAGUE is a membership organization for the promotion of science fiction. There are no dues, no fees, no initiations, no contribution with the LEAGUE. No one makes any money from it; no one derives any salary. The only income which the LEAGUE has is from its membership essentials. A pamphlet setting forth the LEAGUE's numerous aspirations and purposes will be sent to anyone on receipt of a 10 cent stamp to cover postage.

One of the purposes of the SCIENCE FICTION LEAGUE is to increase the number of its loyal followers by converting potential advocates to the cause. To this end, the SCIENCE FICTION LEAGUE supplies members with membership letterheads, envelopes, lapel buttons, and other essentials. As soon as you are enrolled as a member, beautiful certificates with LEAGUE's name will be sent to you, providing 15¢ in stamp or coin is sent for mailing and handling charges. However, this will be given free to all those enrolled members who find it possible to call personally at Headquarters for it.

Another consideration which greatly benefits members is that they are entitled to preferential discounts when buying science fiction books from numerous firms who have agreed to allow lower prices to all SCIENCE FICTION LEAGUE members. The book publishers realize that the more fervid fans there are to boost science fiction, the more business will result therefrom; and a goodly portion of the publishing business is willing, for this reason, to assist SCIENCE FICTION LEAGUE members in increasing their science fiction collections by securing the latest books of this type at discounted prices.

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WONDER STORIES is the voice of the SCIENCE FICTION LEAGUE—a monthly department appears in the magazine.

Science Fiction League

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John Dow

as a member of this League.

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VOLUME 7

No. 7



JANUARY
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• • • • Prophetic Fiction is the Mother of Scientific Fact • • • •

HUGO GERNSBACK, *Editor-in-Chief*

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WONDERS OF SPACE FLIGHT

By HUGO GERNSBACK

AT the present time, the idea of space-flight remains still in the domain of science-fiction, no actual attempt having been made. Scientific books of high calibre have, of course, been written on the subject, and the general aspect of space-flight is pretty well understood from the theoretical viewpoint. All that is required today is a suitable fuel for rocket propulsion, because this particular form of applying energy today seems to be the most hopeful one in science.

There may, of course, be in the future some other solutions which, as yet, are only dimly understood by us. It may be, for instance, possible to use the anti-gravitational method; but as we know nothing, or at least very little, about the nature of gravitation, we are not in a position to do much about it. There may be also some electrical method or other techniques totally unsuspected, but all this belongs in the future.

Before we go into the actuality of space flying, this seems like a good point at which to call the attention of many science-fiction authors to the childish way in which many of them treat the idea of space-flying. We are continuously bombarded with manuscripts of interplanetary stories where the author delights us with the idea of two heroes who blithely jump into an ordinary airplane, equipped with a few rockets, and then merrily shoot into space to Mars, Venus, and even the sun. They have made little preparation for the flight and, of course, theirs is also the first one in history. In mid-space, millions of miles away from the earth, we find them wiping condensation with their handkerchiefs from the windows inside the space-flyer. We find them pulling down shades to do away with the sun's glare, and equally ridiculous situations.

The idea of preparedness means nothing to these authors. They do not seem to understand that, when the first space-flyer finally starts for

our nearest neighbor in space, it will have been preceded by hundreds of test flights into the higher reaches of our atmosphere. Nothing will have been left to chance. The best brains of the world will have worked on what equipment the machine will have and all eventualities will have been calculated in advance of the flight. Space-flight will not be different in its evolution from the locomotive, the automobile, or your radio. It will move along the same painstaking road, and the evolution will be very gradual. No boy scientist, no science-fiction professor will build the machine in his backyard and take off for the moon and become the first one to do so. Science and evolution don't work in this manner. It will all be done in an orderly and scientific manner, and it won't happen all over-night. Before you start walking, you creep. For that reason, many test flights will have to be made; at first only a few miles up into the upper reaches of our atmosphere; then up to a few thousand miles; and after that there will probably be a long interval before actual long distance space-flight is accomplished.

Science fiction authors should witness the slow and painful evolution of aviation. The airplane was 24 years old before Lindbergh flew across the ocean. The recent successful trips of the American seaplane *Pan-American Clipper* into the mid-Pacific also shows this evolution clearly. First there was a trip to Hawaii and back; and then a still longer round trip was made. Then, the still further outpost of the Midway Islands was negotiated, and again back to the mainland. In other words, the *Clipper Ship* did not immediately start from the Pacific coast to land in China by a few hops. Progress simply doesn't work in this manner.

Space-flying will follow along the same slow lines of development; and the chances are that it will be a great many years before the first men will make a successful landing on the moon.



(Illustration by Paul)

The clashing right pincer was neatly sheared off close to the
reptile's ugly head!

A WORLD UNSEEN

By

JOSEPH WM. SKIDMORE

PART ONE

• Keenly aware of my vast lack of literary skill and astounding want of technical, histological knowledge, I record the adventures of Don and Mado in the realms of the infinitely small. For me to attempt such an abstruse subject is an act of rash conceit—but this weak pen must try!

While the microscopic adventures of Don and Mado may seem to be the fantasy of an over-active imagination, please remember that the germ monsters they meet and the conditions they experience are taken from accurate, authoritative, scientific works of histology and the human body.

So, learned reader, endure with me in patience and understanding, for I have the futile, embarrassed feelings of a man suddenly called upon to explain the theory of relativity to Mr. Einstein!

J. WM. S.

CHAPTER I

The Falcon Swoops

• Donald Millstein, scientific investigator extraordinary, had just delivered a highly technical dissertation to a small but appreciative audience of two. It was a discourse that concerned the nature of atoms—and of electrons. Donald paused and gazed about his wonderful laboratory with proud, possessive eyes; then, he turned to look at the beautiful girl standing by his side. Now, his eyes held a prouder look.

The girl, Joane Cromwell—Donald's fiancée and gallant comrade in many in-

• Though Mr. Skidmore has long been a favorite science-fiction author, this is the first of his efforts it has been our good fortune to obtain, and we are proud to state that it is one of his very best. This is due mainly to the fact that it was written specially for us in consideration of our new story policy.

Science is not always easy to enjoy in story form, and we have always had this fact in mind. Very often, a story is spoiled because it contains too much technical science that makes the reader feel as though he is reading a text book instead of fiction. Then again, the science may be absent to such an extent that the story becomes a fairy-tale.

We have tried to keep a balance in all our contributions, so that some good, instructive science can be found in all stories, but presented in such a way that the reader is not even conscious of it—his attention is all taken up by the intrigue of the plot—but he is so much the wiser when the story is finished.

If you are expecting here a thrilling, exciting adventure among weird surroundings, you will not be disappointed.

credible, dangerous adventures—laughed softly, as she made a very feminine observation.

"Donald, sometimes I almost feel that you love your laboratory and scientific research more than me." Then Joane rippled in tones limpid as swift water pouring over a brook shallow. "You know, my dear, I want to marry *you*—not a laboratory or a scientific experiment!"

Donald did not reply; his dark, handsome head hung in silent meditation; he had much to think about—things of grave portent, for he had received a secret warning from his enemy, the Falcon.

Don and Joane had two great loves—each other—and glorious adventure; together these two had often sped on flash-

ing wings to remote parts of the earth—there to experience some astounding peril or to render some confidential and hazardous service for the government. A famous pair, these two! The world would scarcely have doubted had Don and Joane suddenly announced that they were going to fly into Hades, ground the devil, and bring home the bleeding hide of the three-headed dog, Cerberus. This gallant, famous pair possessed the love of Dante and Beatrice and the courage of Theseus slaying the Minotaur.

Jack Cromwell, Donald's assistant and Joane's brother, removed his bold, young eyes from an ultra-microscope, and bantered.

"I wish you two love birds would get married; then we could get some work done around this lab."

Joane simulated rage and shook a lovely fist at her irrepressible brother.

"You rogue," she flashed; "you talk too much. You'll frighten Don away from our wedding plans!"

"Oh, yeah!" persisted Jack. "All Don can think of is love and marriage. You should marry him, so he can get his mind on his work."

During this happy bantering, Don had remained quiet; a serious, somewhat unhappy expression settled deeply into his keen, strong face. Now he spoke, and his tones were tender, but determined.

"Joane, we must not marry until I have trapped my sworn enemy, the Falcon. You know, for years, the Falcon has tried to kill me. It is not right for me to marry you with the ever-present danger that the resourceful Falcon might make you a widow. And you're too beautiful, my dear, to be a widow—much too beautiful! You see, I received a mysterious message yesterday from the Falcon, a warning that he is about to strike at me again! I'm not afraid for myself, but I *am* afraid for you. And I've learned not to underestimate the amazing ability of this mad foe of mine. Who can guess what insanely clever device of murder he will use this time? Jack, we've got to be on our guard!"

"But you've always defeated the Falcon," burst forth the impetuous Jack.

"Yes," replied Don, "we have, and we've had a lot of good luck on our side. The Falcon is desperate, since we captured him in the government underground vaults. Too bad they allowed him to escape. We must admit the genius of this mad assassin who is obsessed with ideas of destroying Jack and me."

Don paused, glanced about his fine laboratory and continued in happier tones.

"Never mind the Falcon. We brought Joane here to show her my new invention. Here it is, Joane; it's called the 'Atomic Reductor.' "

"Cosmos!" breathed Joane, as they stopped before a strange dangerous-appearing apparatus. "What is an Atomic Reductor? It looks like a giant electric-chair—without the chair!"

Don smiled and began to explain in a very academic manner.

"All matter is composed of molecules, which are made up of the various ninety-two known kinds of atoms; these atoms, in turn, are made up of various numerical combinations of positive and negative electrons; the numerical combinations of the electrons classify the kind of atom. Each atom is a busy, whirling, orbiting, diminutive solar system. In each and every kind of atom there are vast spaces between the electrons—spaces as vast, relatively, as the distance from our earth to the sun."

Joane smiled at Jack; this elementary science was well-known to them, for they were splendid, accomplished students of science, physics, and chemistry.

"Don't smile yet," admonished Don. "I'm telling you the fundamental facts to prepare your young minds for a startling surprise. And here it is: my Atomic Reductor develops a strange energy ray which instantly reduces the orbits of electrons in the atoms! This ray does incredible things to atoms which are placed under the Reductor. It changes the usual repellent force of the atom's positive electrons in the atom's nucleus, for the orbital, negative electrons to that of a magnetic

force. In other words, it causes the positive electrons to draw the negative electrons in close to the atom's center. This causes all the electrons to move in close to the affected atom's nucleus! Don't you see? The Atomic Reductor reduces the size of atoms by crowding up the electrons. And when the size of atoms is thus reduced by millions of times, it follows, as a natural law, that molecules and masses of matter are likewise reduced. Why, if all the electrons in my body could be squeezed into a perfect solid, the resulting mass would be barely visible with the most powerful ultra-microscope! It's amazing! I've been working on this for months. Watch now; I'll put this white rat, cage and all, on the floor of the device. Stand back! I'm going to start the Atomic Reductor!"

Don went on explaining as he made quick, practiced adjustments on the portentous-appearing device.

"This will be a great boon for humanity as soon as I'm sure it's safe to reduce a human being to a microbe's size!"

"Think of that! Man, reduced to the size of an ant—or even smaller, could investigate the marvelous world of the infinitely small! Then what wonders of chemistry and science can be wrought! And man will learn the truth about microbe life! Even the untold secrets of cell life—of the amoeba—will be as an open book. Perhaps, even the secret of life may be solved! Now watch, I'm going to start the Reductor."

Large neon-like globes suddenly burst into sputtering life; great rotors whined crescendo as mighty energy surged and boomed through high-powered generators. The air was filled with ozone and the rippling, streaking, vibrating static of vast millions of energy ergs.

Joane gasped in sheer amazement; before her startled eyes the white rat and cage were swiftly and magically diminishing in size! Within a minute of time, they disappeared from sight! Where the rat and cage had been was a smooth, white surface. Apparently, there was nothing there.

Don's voice broke in on Joane's astounded consciousness.

"The rat and cage are there, Joane; but they are reduced in size to the point where they are not visible to the perfect human eye. And, as I have turned on full power, I doubt if the rat and cage are visible with even the most powerful ultra-microscope! But the rat is there—alive and unharmed!"

"Can you bring it back to normal size and condition?" asked Joane in an awed voice.

• Donald Millstein, although a world-famous scientist and super-investigator, was not of the usual "professor" type. He was not aged and bearded nor spectacled. On the contrary, he was young, virile, and athletic. His fine figure and handsome face had tugged the heartstrings of many a fair maid. Not to record that Millstein was a Don Juan; his heart was entirely dedicated to Joane, and his scientific researches, and the undoing of dangerous criminals.

Millstein's deceased father had been a powerful figure in the world of finance. The father, with a mad obsession for power and wealth, had accumulated millions and had been the target of indignant public criticism. Scandal, regarding the sire's great wealth, had reared its ugly head. There were government investigations and hideous questions about ruined stockholders. Donald, then a mere motherless lad, learned to hate money and to despise the unscrupulous methods of his father. Embittered, Don turned all his maturing energies to a diligent study of science and chemistry. When Don was twenty-two, the canny scheming Millstein senior had died.

Donald, his father's sole heir, attracted favorable world-wide attention by restoring all money to every swindled stockholder. This laudable work required two years and young Millstein, with his remaining vast wealth, diverted all his time and energy to science and to the highly dangerous work of netting international and powerful criminals.

Jack Cromwell, a former accountant in the father's office, had worked day and night to assist young Millstein in the altruistic labor of restoring stockholders their moneys.

Thus a fine enduring friendship and understanding was formed, the friendship of Castor and Polydeuces, the mythological warriors and adventurers who always fought side by side against a common enemy.

Jack loved Don, his splendid chief. Together the two had experienced astounding adventures. The government had often called Millstein to destroy master-crooks and their terrible plots and intrigues against the society of civilization.

Because of Jack, Don had met Joane. Joane often accompanied Don on desperate expeditions. This friendship had developed into love. And it was a love born of many perils shared together.

The sworn enemy of Millstein was the Russian scientist, Verensky, who smuggly and vainly named himself "The Falcon."

The story of the "Falcon" is a strange, tragic narration of the breaking down of a fine mind.

Verensky had been a wealthy Russian physicist. Ten years before the sequence of this record, he had come to America with a great plan of new ideas for laboratories and scientific research. His discoveries for controlling the electrical energies of electrons within atoms had startled the world. His massive brain, housed in his incredibly strong body, became over-taxed and the Russian's sensitive finely-balanced reason tottered. Unfortunately, the Falcon became involved in a tax controversy with the United States Internal Revenue Department which filed a heavy income tax lien against the Russian's holdings. This developed into a legal battle which resulted in Verensky's property and laboratories being seized by the government.

A part of the Russian's brain snapped and he became a maniac—a madman armed with a marvelous, dangerous intellect and scientific knowledge. He crossed the delicate threshold between

sanity and lunacy. He became obsessed with the idea that he must overthrow all existing governments. His distorted mind was determined to destroy—and to rule the world! The once kindly, generous brain became an evil, monstrous thing, all the more dangerous because the remaining normal brain-cells retained his vast, technical learning. Verensky was more dangerous than ten thousand drug-crazed criminals because of his super-scientific knowledge!

The "Falcon" disappeared from the haunts of men and women, but his machinations were felt. A master at disguise and intrigue, the world never knew when, or where, he would strike!

But the world knew he would strike again and again, always with some new, fearful, and deadly weapon!

Several times, Millstein had foiled the "Falcon" when the criminal menaced civilization. In each exciting encounter, Millstein had defeated the Russian's purpose; but always the "Falcon" escaped by some desperate and insanely clever ruse.

The fiery hate-cankered "Falcon" had sworn by all his evil gods that he would bring a fearful vengeance upon Millstein because of the young scientist's thwarting of his nefarious schemes.

And Donald Millstein, lips taut and black eyes snapping with determination, had pledged his God—and Joane—that he would bring the "Falcon" to justice.

• "Yes, Joane," replied Don, after a long pause; "I can. Watch the platform of the Reductor."

Don reversed the complicated motion of the machine, and almost instantly the cage and white rat reposed on the platform! They seemed to have suddenly materialized to normal size out of nothing. The white rat was surely unharmed—and even undisturbed—for it was greedily eating at food in its cage!

"It's a wonderful thing," breathed Joane, as she moved away from the Reductor device; she felt the need of fresh air after the stifling ozone from the fearful electrical forces. She turned toward

an open window to behold a horrifying sight.

A cruel, evil face was glaring through the laboratory window—a face with murderous eyes gleaming like those of a tortured cobra! Then a repulsive claw-like hand thrust through the window. And that hand held a revolver!

Joane tried vainly to scream a warning to Don; for she could see that the gun was being aimed, not at her, but at the broad back of Donald. Her voice would not function! Both Don and Jack were busy at the Atomic Reductor, and their backs were toward the window.

Joane, temporarily frozen with horror, slowly regained her usual, keen faculties as she saw the hate-maddened eyes aim gloatingly along the gun barrel. She knew the assassin was going to shoot Don in the back. Her brave, resourceful mind suddenly snapped to normalcy. She now realized that there was no time to shout to Don—not a precious split-second to give a warning. Without a sound, and quick as a panther springs, the courageous girl threw herself into the line of the pointed gun. Her lovely body took the bullet, which was intended for her lover. The explosion of the lethal weapon shattered the quiet atmosphere in the laboratory.

Don and Jack whirled. They were astounded to see Joane collapse on the floor; her body was twitching slightly. As Don sprang to Joane, his quick eye caught a glimpse of the evil face withdrawing from the window.

"Get him, Jack!" shouted Don, as he tenderly took up Joane's limp form; "it's the Falcon!"

But the ready-witted Jack was already bent on vengeance; his hurtling body flashed through the window—like a springboard diver plunging through a suspended hoop.

"Joane! Joane!" yelled Don in frantic tones. "Speak to me! Are you hurt?"

"Yes, Don," came in mumbled, tortured tones; "he tried to shoot you! I want to—" Joane was suddenly unconscious.

Jack entered at this moment; he was dishevelled and bleeding from slight wounds. He dragged behind him a limp human form. Jack, not knowing of Joane's serious gun-shot hurt, grinned and shouted.

"I got the dirty snake; but he's not the Falcon! It's some killer sent by the Falcon!"

"Tie him up," interrupted Don, sharply. "Joane has been shot; she's badly hurt! I'm rushing her to Bellerade hospital in the roadster. Phone Bogart Mado, the surgeon, to meet me there. Drug the killer and follow me! Hurry!"

"Okay, Chief," gritted Jack.

CHAPTER II

A Desperate Predicament

• Donald Millstein, haggard of eye and lined of face, groaned in anguish as he appealed to the most famous and skilled surgeon in all the world.

"Doctor Mado, you must save her! You must operate! Surely you can do it!"

Bogart Mado, renowned disciple of the ancient Asclepius, glanced hopelessly at his long sensitive fingers and muttered.

"Don't you see, my boy? I cannot operate—no surgeon would dare it. The bullet penetrated partly through the spinal column; it spent its velocity there after passing through Joane's lungs from the front of her body. The bullet is lodged in the partly-fractured spinal column; and, worst of all, it is pressing against the spinal cord. You can see that by this X-ray picture. The lead pellet, pressing and impinging the spinal cord, causes Joane to be unconscious and paralyzed. It is death to operate; and, if she lives, she will always be an invalid—partly paralyzed. I'm sorry, Donald, but this is a case where my skill is worthless."

"Doctor," intoned Don, "she must not die! She leaped in front of the killer's gun and took the bullet intended for me! You've got to save her! You must operate!"

The great Mado, whose uncanny skill with the knife and medical knowledge was a tradition, sighed deeply, and his lean, intelligent face suddenly seemed to be etched with all the misery and suffering of the ages. He argued softly.

"Don't you see, my boy? I cannot operate from the back, for then I would have to go through sound bone and tissue to reach the bullet—and it would be folly to operate through her lungs. Even if I could operate from her back, the bullet's position against the spinal cord is fatal; no human hand could remove that bullet without fatal damage to the spinal cord. See this chart I've made of the wound and bullet? If I were only a microbe and could crawl into that wound and see just how the bullet is located—ascertain just how much the spinal cord is damaged—perhaps I could then operate with minimum risks. If I could only—"

"Wait, Doctor," shouted Don, springing to his feet in great excitement. "I've an idea—a sudden inspiration so daring it frightens me! Your words give me an amazing thought! Mado, my good friend, will you risk your life to save my Joane? I have millions; they're yours if you will dare this thing! It's big, Mado; it will work! Will you risk your life for Joane—for me?"

"I will," stated Mado, simply; "but what on earth are you talking about? You're delirious! No wonder, you've been without sleep for days. Let me feel your pulse. And don't speak of money. You know I would do anything for you or Joane."

"No, Mado, I'm not crazy; I'm all right!" Don was now gibbering in his vast excitement; he choked with emotion and almost screamed.

"Mado, you and I are going to reduce ourselves to microbe size! We're going into that wound as tiny men! We're going to operate with tools inside Joane's body! No, don't think I'm mad! I've made a machine—an Atomic Reductor! I've reduced animals to microbe size without harm; but it may mean death for humans to try it! But you'll risk it!"

We can do it! Let's go to my laboratory. I'll show you. Come on!"

Don grabbed Mado and nearly dragged him from the hospital room. Mado, convinced that Don had lost his reason, followed Don's flying feet

Three hours later in Don's laboratory, Mado turned to Don and solemnly took him by the hand.

"Don," he said, "at the hospital, I thought you had lost your mind and were a psychopathic case. I decided to humor you; I thought you might become violent if I didn't. But you have just shown me the wonder of wonders!" The surgeon waxed eloquent and his voice quivered with excitement. "If this can be done, Don, it will be the greatest discovery of the ages! Think: surgery—perfect accurate surgery by tiny, skilled operators inside the patient's body! It's stupendous; it's colossal!"

"And it's dangerous, Mado," broke in Don. "Remember, I've never reduced a human, and we've countless preparations to make. We must prepare tools, lights, oxygen tanks—many items. Most important of all, I must perfect my gravity nullifier at once. It's a mighty risk, Mado."

"Well, let's get at it!" Mado snapped impatiently, his dark, intense eyes gleaming with excitement and aroused scientific ardor. "Risk—danger, indeed! Who cares about danger when such a glorious, epochal experiment is at issue? Let's prepare the tools and equipment we will need at once! Here, Jack, help me make a list. Danger—peril—risk, indeed! Boys, we're going to make medical history!"

Had it been any other time and had Don's heart not been torn with grief, he would have smiled at the famous Mado's eagerness. Don reached out with sudden impulse and again grasped the surgeon's hand; his voice trembled a bit.

"God bless you, Mado—my friend; I—I love you for that speech! Let's get to work. Mado, you and Jack prepare the tools and equipment; I will finish the gravity nullifier. Make the tools about twice as big as ordinary hatches, axes,

and swords; for when we are reduced to microbe size, our strength will be prodigious compared to our size. You know the astounding strength of fleas, ants, and even microbes! The tools you will make will be reduced proportionately with us in size when we go under the Reductor's rays. For instance, Mado, that splendid army cutlass you have selected will be an infinitely small lancet after it is reduced with us by the Atomic Reductor. We don't want the tools to be too small, for we have heavy work to do in Joane's body around that cursed bullet."

• For several days, the three men worked unceasingly; every tool and item of equipment was checked with utmost care; every calculation was checked and rechecked; countless experiments were made with the Atomic Reductor; every facility of Don's mighty organization was thrown into this Herculean—yet Lilliputian—task. The three men were, without question, the best equipped, mentally and physically, in all the world for such painstaking scientific preparations. And Don and Mado were, most certainly, the finest selection for the incredible, hazardous adventure.

Don found a few precious moments to dash to Joane's bedside. On this occasion, he went with Mado, who made a careful examination of the unconscious girl.

It was now that Don uttered loud, strange words—words which startled even the usually imperturbable Mado.

"Mado, let's tell Joane in loud tones of our plans to operate! I have the strange but mighty feeling, even though she is unable to move or speak, that she is normal mentally—that she hears and understands what we say!" Don moved close to Joane's white, passive face, took her slim hand in his strong, bronzed one and spoke slowly and distinctly.

"Joane, my dear one, we're coming to save you! We *will* save you! Be a stout fellow! Do you hear? Listen, my darling, this is how we're going to do it—"

Don continued in a calm, clear voice

to describe his wonder-plan of operating.

Mado, eyes glued to a sensitive blood pressure apparatus which was fastened to Joane's upper left arm, was deeply moved by Don's supreme devotion. It must be recorded that Mado, the case-hardened and courageous surgeon, wiped away some concealed tears. Suddenly Mado stiffened and gasped.

"Don, her blood pressure has raised a point! She hears you! Her brain faculties of reception are normal—not paralyzed! Joane!" The surgeon shouted in his excitement. "We will cure you! I, Mado, promise it! Don't tire her, Don." Mado was again his usual controlled self and the sympathetic physician.

Don finished as though Mado had not interrupted. "—and everything is ready, Joane. Tomorrow, we move you to the laboratory where you can be close to the Atomic Reductor. Mado will have his entire personal staff to assist. Good-bye for now, my dear!" Don took a long affectionate look at the girl's expressionless face and left without a word. Mado remained to give terse technical instructions to the doctors and nurses. Then he, too, left for Don's laboratory.

Late that same night, Don glanced up from some abstruse calculations and made some adjustments on two small, strange devices on the desk of his laboratory. He looked at Mado and Jack with tired, swollen eyes and spoke.

"Our two gravity-nullifying devices are perfect; they are the most important pieces of our equipment. Without these machines, we could not possibly be reduced in size or make the trip into Joane's body. When the masses which compose our bodies and equipment are reduced to microbe size, all—every one—of our original atoms will be present in our diminished sizes and will weigh exactly the same. Every atom and molecule of our masses will be the same as to numerical composition and position, but each atom will be smaller by millions of times, because every atom's electrons will be closer packed into each nucleus. Without the two gravity nullifiers, our

weights, after our sizes were decreased, would be so tremendous, in relation to our sizes, that we could not move a muscle! In fact, with such a vast weight in relation to our sizes, our tiny bodies would be pulled by gravity right through such substances as wood—or even some of the dense metals! Our small masses would plunge right through Joane's body as if it did not exist! But the gravity nullifiers will lessen our weights to a degree proportionate to our reduced sizes. Gravity, as you well know, is the tendency of masses to fly to the center of the earth. My gravity nullifiers will regulate by adjustment a satisfactory weight to suit our tiny sizes. I won't take time to tell you in detail how my gravity nullifier absorbs the power of gravity; but I will tell you this much in a few words—countless billions of hydrogen and helium gas atoms are constantly escaping from the earth into the void of space. Their lightness and lifting power enable them to escape the earth's gravity. My nullifiers have a vibration exactly in harmony with helium and hydrogen atoms and can draw upon the lifting power of the quintillions of these atoms. Thus, with nullifiers strapped to our backs and adjusted, Mado and I can regulate our weight as our sizes shrink. Jack, when Mado and I are in the Reductor, be sure to decrease us slowly—take an hour for the change to small size. And don't move the power dial beyond ninety-six! The result would be fatal if our electrons were crowded in until they actually met each other and coalesced! The result would be a sort of cosmic short-circuit! —and Mado and I would instantly become splashes of energy—gas, incredibly hot!"

Jack looked at Don with appeal in his eyes as he answered.

"I'll do my stuff, Don; but I wish you'd let me go along. You may need me, and I've always gone with you on dangerous work."

"I'm sorry, Jack," stated Don, firmly, "but your job is to run the Atomic Reductor. You're the one person who un-

derstands it. Besides, you're the best man to guard Joane and the laboratory while Mado and I are gone. Remember, the Falcon may attack or may send another one of his dope-maddened henchmen to do some more damage. Keep our armed men around the laboratory at all times."

"And now, boys," informed Mado, in strict professional tones, "I want you two to get some sleep. Tomorrow is a big day and we face a great ordeal. We will need all our wits and strength. Don, you are worn out. Everything is ready—every detail. Why not get some sleep?"

"I've two more things yet to do," stated Don. "I'm going to the prison hospital and question this killer, who was, no doubt, sent by the Falcon. Then I'm going to see Joane; I've something to tell her—alone!"

"No use going to see the killer," said Jack. "I talked to him this morning and he told me a lot. You've been so busy, I didn't want to bother you about it."

"What did he tell you?"

"The murderous devil told me that he is but a wretched tool of the Falcon. He said the Falcon has hundreds like him—gangsters that he has captured to use for his purposes. The fellow told me he would die soon. He said the Falcon keeps his henchmen under hypnotic control and also keeps them hopped-up with a fearful drug. He says this deadly drug keeps them absolute slaves to the Falcon, for they all die unless the Falcon gives them a constant supply of the antidote for the drug. You see, the Falcon gives them habit-forming poison and then holds them in his power with the antidote. The criminal said he knew he was going to die soon, that he was glad to die to escape the Falcon's fiendish control. He swears he was under hypnotic influence when he made the attack on us in here, says he doesn't remember anything about it. He claims the Falcon is invincible!"

"We shall see!" gritted Don. "As soon as Joane is well, I am going to get the Falcon!"

"The poor devil of a killer was right

about the drug, Don," went on Jack. "The prison just phoned that he died in agony from some mysterious poison!"

"The Falcon is diabolically clever," mused Don, "but his master will have to wait until Joane is safe! I'm going to see Joane—to tell her something important."

"All ready for the morning, Don," sang out Mado. "And you get some sleep."

"He won't sleep, Mado," said Jack, "and neither will I. I'm guarding this laboratory from now on!"

"Come to think of it," grinned Mado, "I'm a bit too excited to sleep myself. Jack, let's check everything over again."

CHAPTER III

Lilliput—and Beyond

- In our universe there are two extreme conditions, the state of being large and the state of being small.

Man is about half-way in size between the atom and the star. Ten of the incredibly small atoms raised to the twenty-seventh power represent the mass of an average human. Ten humans raised to the twenty-eighth power would be about the mass of the average star.

How large is big? How little is small?

Let us contemplate these questions for a moment, before we go with Millstein and Mado into the weird world of the infinitely small.

The mighty sun looks even smaller than the moon; but we know that one million three hundred thousand earths could be packed away inside of the sun! Yet how puny and insignificant is our sun compared to the star, Betelgeuse, which is 230 times larger in diameter. And consider Antares, which is more than 400 times greater in diameter than our sun! Ponder of the vast universe of stars, moons, and worlds—and of mighty suns, in which more than a billion of our suns could be packed away!

Now let us consider the smallness of things.

The small period (.) which is printed

at the end of this sentence is about one-half millimeter in diameter. Let us divide this dot into exactly a half-millimeter in diameter. Then let us divide this half-millimeter dot into a half-million parts. We will call these tiny half-million specks "micro-dots."

The perfect human eye can barely see a speck equivalent to about 20,000 "micro-dots." A powerful microscope makes visible the mass of 250 "micro-dots"; the ultra-microscope makes visible particles small as two "micro-dots." Particles smaller cannot be made visible by any known means.

The sugar molecule—one of the larger molecules—has a known diameter of 0.7 "micro-dots." Sugar (sucrose) has the chemical formula $C_{12}H_{22}O_{11}$. This tells us that in a sugar molecule there are 12 carbon atoms, 22 hydrogen atoms, and 11 oxygen atoms—a total of 45 atoms in the tiny molecule but 0.7 of a "micro-dot" in diameter!

Man has never beheld an atom—much less an electron!

And, now, if your brain is not weary, consider that each of those 45 atoms are, in turn, made up of many numerical combinations of positive and negative electrons!

Man, laboring earnestly, humbly, and devoutly at the bottom of a vast sea of yet undiscovered marvels, has definitely established the atomic weight and atomic number of each of the known ninety-two elements with the years of chemical knowledge and experiments, the spectroscope, and the photographic study of radio-activity.

Your humble author, keenly aware of his vast lack of literary skill and poverty of scientific knowledge, feels that the brief, foregoing interlude of science is necessary—to make us *en rapport* with Don and Mado as they journey into the bizarre world of the tiny things.

In Don's laboratory the air was tense with suppressed excitement and intense determination. All final preparations had been made; every abstruse calculation had been rechecked; every detail of instruc-

tion had been retold. It was difficult to realize, considering the hurried but calm, quiet movements of those in the laboratory, that two brave men were about to step off into the most weird and dangerous adventure ever conceived by man!

Joane's bed, and Mado's staff of trained assistants, had been moved to the laboratory—close to the Atomic Reductor. At last, everything was ready. Don looked at Mado, saying, "Are you ready, Mado?"

The great surgeon grunted: "I'm waiting for you!"

It was a dramatic moment when Don stepped to Joane's bed and spoke in tender tones.

"My darling, we'll soon be with you."

Working quickly but carefully, Don and Mado began to don their oxygen tanks and fasten their tools and equipment about their bodies.

Without indicating the slightest fear or trembling, they calmly stepped into the Atomic Reductor. No one spoke as Jack slowly started the device. Those in the laboratory stared with bulging eyes as Don's and Mado's bodies were literally bathed with seething, snapping, leaping energy! It was one of those rare moments when mere words are futile.

Jack, with every faculty strained to the task of operating the Reductor, gasped as he saw Don and Mado slowly shrink in size.

Don kept an Argus eye on the gravity nullifiers which were strapped securely to their bodies. He hissed to Mado:

"Watch your gravity nullifier; when you feel the floor pushing on your feet—like going up in a fast elevator—, lessen your weight to suit. Careful! If you moved the dial too far, you would dart out into space! Cosmos! We're now midgets in size, but I feel fine—no bad effects."

• Mado did not reply; he was watching his gravity nullifier with anxious eyes. After a tense half-hour period, Don spoke again.

"The ozone is getting a bit heady. If

it gets worse, we may have to put on the diving helmets and turn on some of our precious oxygen until we're reduced to microbe size and the Atomic Reductor is stopped by Jack."

"I'm all right," replied Mado, "but look!—the room is getting larger! It's now like a mighty cathedral; I can barely see the furthest walls. They seem a mile away!"

"The room has not changed," explained Don; "our relative idea of the sizes of things has changed, for we are now tiny men—scarcely an inch tall! I'm going to shout to Jack—to see if he can hear us! Jack! Jack! Can you hear me? We're all right!"

After a short interval a great booming, thunder-like sound roared into Don and Mado's startled ear drums—like the combination of Jupiter shouting to Hades!

"What was that?" gasped Mado.

"It was Jack's voice," said Don. "His voice sounds like heavy artillery to us now! I could not understand what he said. No doubt, my shout sounded like a mouse's squeak to him! In another few minutes, he will not even be able to hear our voices; for, as our size grows smaller, the pitch of our voice vibrations will be of such a high frequency that they would not register on his ear drums. And, of course, his low-pitched vibrations will not register on our ear drums! You know, Mado, that many insects give off vibrations of such high frequency that they cannot be heard by normal human ears. Truly, Mado, we're in a strange world! Look!—the walls and ceiling of the laboratory have disappeared! At least, they have disappeared from the scope of our now relatively limited vision, for we are now tiny men but the size of pin-heads! When the Atomic Reductor's noise is stopped, we will hear a great variety of sounds never before heard by man!"

"Heavens!" burst out Mado. "Look at all the strange colors we see from the light—new colors which man has never beheld! Shades of violet and yellow! But they are not violet and yellow; they are

new colors! What does that mean, Don?"

"It means," explained Don, "that, as our size has diminished, our eyes now have the power to register color vibrations which were before quite invisible to us! Laboratory experiments have proved that the difference between violet and red color is in the number of microscopic waves of light which enter our eyes in a second of time. If seven hundred and fifty-six millions of millions enter our eyes in a second, our nerves are affected in such a way that you call the sensation violet. These waves cannot be seen in a microscope. The number of waves per inch of each color in the rainbow has been counted. Fifty-five thousand waves to the inch give us the sensation of blue; forty-eight thousand vibrations, green; forty-four thousand, yellow; thirty-eight thousand, red. When the waves become so long that less than about thirty-three thousand occur, we are unable to see them. For example, alcohol flame does not send out waves that can make any impression on the nerve of the eye. Invisible light also comes at the other extreme, where the waves are so short and crowded together they don't give our eyes any sensation at all. You can compare this to the piercing shrieks of some laboratory apparatus, or the insects that produce vibrations so shrill that they don't affect our ear drums at all. If the waves of color are so short it takes over sixty-six thousand of them to make an inch, they are totally invisible to our eyes, and are called ultra-violet. And in this new world of the small, we will see many strange colors and hear sounds never experienced by man! By the beard of the Comet! It is suddenly quiet! Jack has stopped the Reductor!"

"How large—I mean how small are we now?" asked Mado.

"I can't say exactly," said Don, slowly. "I think we're about a hundred 'micro-dots' high—and that's very small!"

"Seems like we're in a very rough country," said Mado, anxiously; "we're in a great canyon, with mountains all around us—and all made of a strange

fibrous substance! What is the matter; have we been moved from the Reductor?"

"No; we're in the same place, but we're now so small that the roughness of the polished marble slab we're on seems like a rough, mountainous landscape! I hope Jack places the capsule close to us, so we don't have to do much mountain climbing over this rough slab to reach it!"

"There's the capsule now!" shouted Mado, pointing to a sphere of translucent material resting across the tops of several near-by mountains. "Good old, faithful Jack! He is probably watching our movements through a microscope!"

"Hurry, Mado!" shot out Don. "Let's climb into the sphere. Jack was instructed to leave it there for six hours—to give us time to find it and climb in! It's lucky that he placed it close to us! Lucky, too, that we made that capsule large—it's as big as a match head; otherwise, we might have had trouble in finding it. Let's hurry and climb into it. Then Jack and the doctors will place the capsule into Joane's body. It's quite a climb up to the gelatin capsule!"

It required some two hours of hard and risky climbing over the rough, porous granite. To a normal human, that polished marble surface would have been smooth as glass, but to the tiny Don and Mado it was a mountainous, crevice-filled landscape.

Don reached down a strong hand and helped Mado up a steep precipice. At the top, and now near the great capsule, they paused for needed breath.

"Well," panted Don, "that was a climb! You know, Mado, we could possibly use the gravity nullifiers and further decrease our weight until we could leap across these rough places on the marble surface."

"Why don't we?" asked Mado. "This is hard going and we must get into that capsule as soon as possible."

● Don sprang to foot and started toward the capsule.

"I considered that," he said, "and I de-

cided it was too risky. We have the nullifiers turned to almost full power now. You see, we are nearly weightless now; if we happened to make any further adjustment of our gravity, we might fly off into space for a moment before we could readjust our proper gravity. We might land again ten feet from this Atomic Reductor and never find our way back again! Mado, we are subject to weird risks as tiny men!"

"It's all so funny," commented Mado; "you seem of a perfectly natural size to me. Even our tools and equipment seem to be the same size as when we made them! But they don't seem nearly as heavy as when we first stepped into the Reductor."

"That's because our strength has increased in relation to our sizes," explained Don. "I suppose that is because our electrons, atoms, and molecules are more closely packed—which, in some mysterious manner, adds to our strength. And, of course, we seem normal to each other; man knows size, heat, speed, and other conditions by comparatively judging the size and state of things immediately about him. Einstein was right when he claimed all things are relative!"

They reached the gelatin capsule, and with their sharp axes quickly cut a hole in the tough, glutinous, isinglass-like material. The capsule appeared to them as a great globe at least five hundred feet in diameter—and yet it was actually the size of an ordinary match-head!

In a few active moments, they were inside the capsule and made themselves comfortable—to wait for Jack and the attendants to place them in Joane's body.

Mado suddenly stiffened and spoke in anxious tones.

"Don, I'm afraid we have overlooked one important element in this trip; we should have sterilized ourselves and our equipment. If we have any dangerous bacteria about us, we may infect Joane! It's strange I did not think of that before."

"Don't worry, Mado," assured Don; "I considered that possibility, and I believe

the chance of infecting Joane is very remote. You see, Doctor, any germs or microbes on us and our equipment have reduced in size proportionately with us! Can you imagine how small they are now? I'm sure all such bacterial life about us has been reduced to a point where life for them is impossible. Surely, all their atoms and molecules are now solid, inert masses—without life! At least, we have to take that risk!"

"Quite true," sighed Mado; "you're right. Any microbe life about us must be too small to exist. I can't get used to this strange world of the small. Look at our tools; they are twice as large as they should be considering our size; yet we can wield them with astounding ease!"

Suddenly Don grasped Mado, and with an easy swing, hoisted the amazed surgeon high above his head.

"We are tiny strong men, Mado," Don said, "as strong relatively as a Hercules! We could perform prodigious feats of strength! Now, you can see why ants and other insects are so powerful for their size!"

"And that may be a blessing for us," said Mado, as Don lowered him. "I am thinking of the countless horrible germ and bacteria monsters which infect every human body—no matter how healthy. We may have some desperate hand-to-hand battles with many such hideous reptiles!"

"We will," stated Don, calmly. "Why do you think we brought these swords and axes along?"

"To operate with," broke in Mado.

"Yes," countered Don, "and to fight with!"

Without the slightest warning, the capsule gave a great shuddering jerk and Don and Mado were thrown violently from their feet. Then the capsule began to rock and sway as a temple in a mighty earthquake!

"Rings of Saturn!" shot out Don, grasping Mado for mutual support. "It's Jack; he's moving our capsule to Joane. I warned him to move us carefully, but he is being as gentle as his great hands

can be! We're on our way, Mado, you brave, splendid friend! You—"

A mighty booming crash sounded! So great was the air-hammer from the concussion that it flung Don and Mado violently to the floor. Again came the vast, reverberating soul-shattering smash—and yet again!

Don sprang to his feet and shouted, "It's Jack's signal, Mado; I told him to tap the capsule lightly—three times—with a fine platinum wire! It's the signal that they have made the agreed deep incision in Joane's back—close to the bullet area—and that they are placing our capsule at the bottom of that incision. Make ready, Mado, to put on your helmet as soon as we need oxygen. Check your apparatus! I want to thank you, Mado, for taking this great risk."

"Forget it," grunted Mado. "We're making medical history. It's getting dark. It is dark!"

CHAPTER IV

Microbe Monsters

• "Watch your oxygen, Mado," came Don's voice through the darkness. "Don't turn it on for a few moments. We must conserve our oxygen. The air in the capsule will last us for a while. And we best not use our flashlights yet. We have light, food, and oxygen to last for five days—one hundred and twenty-four hours, to be exact. We will wait for a few minutes and then light our electric torches, start our oxygen flow into our helmets, and cut through the capsule into Joane's flesh. The capsule will soon dissolve from moisture. Mado, you and I are about to step out into a bizarre and weird world!"

"I'm nervous," admitted Mado; "I feel like a medical student at his first human dissection!"

"Turn on your torch, Mado," Don said, "and let's go! Remember, now, that we're situated in Joane's body about an inch from the bullet at the ninth vertebra. Between us and the bullet is the spinal column. It's a hard, long journey to that

bullet and we must be careful not to get lost. I'm depending on you for guidance, Mado; your vast knowledge of the human body will stand us in good need."

"I'll do my best, Don—but I still feel like a mere medical student in this incredible test of my skill and knowledge. My plan is to go through the ninth spinal joint to the shattered area where the bullet is located. This route would be shorter in time and distance than going around the spinal bone column."

"Don't forget, Mado; we're so small that we can move quite freely through the bone structure!"

"Quite true," replied Mado; "you're right. Besides, human bones are very porous and contain many openings—called Haversian canals—for large and small blood vessels. Perhaps we can make good progress through some of them."

Don and Mado stepped from a hole cut in the capsule and experienced the sensations of two deep-sea divers in thirty fathoms of dark, sluggish, inky water. The strong lights of their two electric torches could penetrate through the thick fluid for only a short distance. Before stepping from the capsule, they had hooked their bodies together with a short chain. This stout, light chain had been ten feet long before they stepped into the reductor; now, it was about a micron in length! This important chain not only held the two adventurers together, but also furnished telephone connections.

"We're in a vast sea of blood," telephoned Don, "from the blood-vessels severed in making the incision for us. Look at those strange beasts in front of us! They're like great rounded jelly-fish. Note how they undulate and change shape constantly. Do you think they will attack us?"

Mado's reply boomed into Don's helmet, and Don fancied there was a slight chuckle in Mado's voice as he said, "Don't worry about those beasts! They are erythrocytes—commonly known as red blood cells. How different they look when they are twice as large as us! These chaps look different now than they did under a

microscope. They are harmless, but the leucocytes—white blood cells—are vicious fighters. Their job is to kill harmful bacteria that invade the blood stream. You know, Don, if a white blood cell comes along, it might think we're dangerous microbes and attack us!"

"Let them attack," Don grated. "I'd like to try out my sword on one of them! Mado, do you feel the pressure of the blood above us?"

"Yes," replied Mado; "I do. I feel like a deep-sea diver in a hundred feet of water."

"Let's hurry through this blood before it coagulates," said Don. "When we crowd into the solid tissues, I think we can move along without having a sea of blood over us."

The two moved slowly along through the murky blood plasma. Weird, rounded, protoplasmic animals in vast numbers floated or undulated by them—fearful, rounded monsters that moved with an astounding amoeba-like power of self-motivation. It was a bizarre, fearsome scene, but the stout hearts of Don and Mado were undaunted.

Shortly, they came to more solid footing and Don said, "I think we had better climb upward for a ways and get out of this blood."

"You're right," Mado agreed. "There can't be more than a few drops of blood in the slight incision they made—I mean drops as we knew a drop of anything before we were reduced in size. Let's go! I—look out, Don, there's a leucocyte—a white blood cell—and it's going to attack us! It will try to enfold us—to digest us!"

"It will find us tough meat!" shouted Don. "Use your sword on it!"

• The great leucocyte, which appeared as a vicious ten-foot globe of evil life to Don and Mado, swiftly changed its devilish like body to a shape like that of a huge menacing umbrella!

The corpuscles (cells) in human blood are much like the common amoebae, the simplest form of life, each having a

nucleus. White blood cells (leucocytes) have the amazing power of self-motivation; they can move about with an astounding waving, undulating, amoeba-like motion, or they can change their shapes at will. These microscopic white blood cells, which roam about the blood stream in an independent existence, can stretch out ready-made tentacle-like arms at will to snare and engulf invading disease germs! These remarkable cells also help to form blood clots after a cut or wound. These hordes of mobile, unicellular glands (white blood cells) are the savage watch-dogs and scavengers of the blood stream. Attracted by devitalized tissue, disease bacteria, or anything foreign to the normal blood stream, these tiny but vigilant leucocyte cells rush to the danger zone and fall with furious zeal upon any unlucky germ, microbe, or intruding bacteria!

To Don and Mado, the attacking leucocyte was a nightmare, leathery horror; it was like a giant octopus, with its tentacles withheld in its own mass, slithering forward with relentless, pulsating, throbbing waves of flowing motion!

Like some fiendish black magic working, a large tentacle formed itself from the umbrella-like mass! The tentacle weaved exploringly toward Don and Mado who calmly stood their ground ready to strike. Suddenly the awful tentacle looped with an incredibly quick movement—to encircle the two men! At the same instant, the whole seething mass of the leucocyte oozed forward with astounding speed!

Don struck viciously at the tentacle with his sword and the keen weapon amputated the feeler like cheese! The severed tentacle floated away with the sluggish current.

But Don and Mado had not divined the wonderful speed of the leucocyte; in an instant, they were securely enfolded within the loathsome mass of the creature, which immediately assumed the shape of a globe.

"Hurry, Don!" gasped Mado. "We've got to cut our way clear of this devil!"

It is reducing its size to constrict us! It has ensphered us and we're in its center! Cut, and cut fast!"

"Okay!" snapped Don, as he began to slash through the leathery, pulsating mass. "Be careful not to cut each other!"

Working furiously, with long swinging slashes, Don and Mado hewed their way through the leucocyte. Several times, they cut their awful way to the outside of the cell, but each time the leucocyte would again enfold its weaving mass about them! The steady carving attack of the two adventurers was irresistible and the mutilated mass of the fighting leucocyte was growing smaller, as many cut away pieces of its body drifted away. Don and Mado were super men—with strength incredible for their size!

In a few, horrible minutes, the leucocyte was literally slashed to pieces by Don and Mado, who struggled free from the diced remains of the cell.

The two men stopped for a moment to discuss the successful combat. Mado, ever the eager, inquisitive scientist, was nearly frantic with excitement; he spoke rapidly and enthusiastically.

"What a manuscript I'll write for the American Association when we return! Imagine!—two humans in a death struggle with a white blood cell! A combat with a giant protoplasm! And, no doubt, Don, there will be more thrills. Wait till we meet some of the trypanosomes—dragon-like microbes with long alligator bodies—at least, that's how they look under the microscope. No doubt, they will have fanged jaws and claws."

"You're full of fight," retorted Don. "I feel that we got off lucky in our scrap with that white blood cell." Then Don, with Joane's peril ever in his heart, added: "Let's hurry! We've got to get to that bullet and do the surgical work you want done! You turn off your light; we'll burn them one at a time to save them. Hello!—we're coming out of the lake of blood; we're at the edge of the incision! What a wonderful sight! Look, Mado!"

Both men stood waist deep in the thick coagulating blood and gazed with awe-

struck eyes at the mind-staggering spectacle before them.

They saw human flesh as it appears to a tiny microbe; they saw the indescribable, inconceivable marvels of the world of tiny—infinitely tiny—things!

It was a mighty unearthly colored jungle of closely packed veins, tissue, nerve fibres, and cells—by the billions in number! It was a living, throbbing, vibrating, intricate jungle of life—and moving, living cells! Small arteries—appearing as vast pulsing, transmission mains of the life fluid to Don and Mado; nerve trunks, with thousands of tendril-like branches radiating in all directions; muscle fibres, twisted close together like ropes and ever moving; blue veins, slowly contracting and expanding by muscular action; white cable-like tendons stretched tautly into an incredible intertwined network; living, working rounded cells, moving about, restoring broken down tissues like skilled human workmen repairing a network of high tension wires—all these things they saw!—a startling, wondrous jungle so closely interwoven that, to anything but a microbe, it would appear as a solid mass! But to Don and Mado, there were thousands of openings through which they could twist and weave.

• Don and Mado, speechless with awe, moved forward until they stood near a small artery. To them, the artery appeared as a great city water main, except that it pulsed at long intervals with a mighty roaring surge.

Mado, ever the academic surgeon, watched the throbbing artery with a marvelling mind.

"Don, Joane has a splendid heart!" he observed. "See how regular and strong it beats! And this is only a very small artery; there are no large arteries in this particular section we're in. Look at those blood cells oozing from the artery!"

As Mado spoke, several blood cells appeared miraculously from the artery and moved to nearby tissues. There, they seemed to enfold themselves about a cer-

tain area and gradually reduce in size. After a short interval, the cells would return to the artery and simply melt through the artery wall!

"Cosmos!" exclaimed Don. "What are those cells doing; and how do they go through the artery walls?"

Mado chuckled and replied.

"Blood cells are the most remarkable of nature's animals! Because of their amazing, elastic qualities, they can ooze through tiny pores of the artery walls—like quicksilver through leather!"

"But what do they do when they constantly go around to different places and stop after they ooze out through the artery walls?" asked Don.

Mado answered as if he were giving a highly-technical address from a lecture platform:

"These red blood cells have just travelled from Joane's lung capillaries; there they become laden with precious oxygen which they are now giving to the constantly breaking down cells in exchange for carbonic acid. Some of the other cells are bringing fat and starch from the stomach to feed the tissues. How wonderful! You and I see with our naked eyes that which scientists worked for centuries to discover. We see how the cycle of life is kept going in a living human body. By the way, Don, the process used by the blood cells to squeeze themselves through the artery walls is called 'diapedesis.'"

"Thanks," said Don, a bit dryly. "Let's move on. Are you sure in which direction to go?"

Mado pointed his powerful searchlight into the ominous jungle thicket ahead and replied: "I think I know this small—I mean large—artery. If I'm right, it goes through the ninth spinal joint by way of a small Haversian canal. Let's follow it. I find, Don, after seeing these wonders, that I know hardly anything about the human body. I wish I could make pencil notes—but I have a good memory!"

Like men stumbling and squeezing through an incredibly thick Amazon jungle, Don and Mado struggled along

the pulsing artery. It was hard going and the high temperature began to sap their strength. Thousands of red blood cells moved and worked about them as they crowded through veins, fibres, cells, arteries, and sinews. They kept a vigilant watch for the dangerous white blood cells (leucocytes) as they struggled along through the hot, dripping, throbbing jungle. For four hours, they travelled, and then stopped to make plans and to discuss their situation.

"I was right about the direction," burst out Mado. "See—this artery is growing larger as more and more arteries branch from it." Mado cast his search-light above him and peered through the incredible dripping jungle. "Yes; we're in the bone structure of the spinal column! Note the closer weave of the tissues ahead. That's the periosteum—the tough membrane which covers all living bones. Don, we will soon be at the area damaged by the bullet. Let's push on!"

With renewed determination and vast courage, they moved onward.

"I overlooked one important element," stated Don. "I forgot to include some refrigerating units in our equipment to offset this heat. But it can't be helped now. How are you feeling, Mado?"

"Great," replied that splendid soul.

After another two hours, Mado spoke in tense tones. "Don, we're near the bullet! See, the tissues show congestion and the increasing temperature shows feverish conditions. The numbers of the blood cells are increasing by thousands! All that means one thing—these blood cells have been called here to repair broken and torn cells and tissue. See?—there's hordes of them flowing off in that direction! Let's follow them!"

"You're right, Mado," exclaimed Don, as he leaped aside to avoid a huge, round undulating cell. "We'll follow them!"

"God—what an adventure!" muttered Mado, not realizing, in his excited ardor, that Don heard his devout words.

After a short time, it became difficult for Don and Mado to move through the

increasing hordes of blood cells. The cells, each twice as large as Don or Mado, slithered along or kept at their endless task of restoring tissues.

"Tissue and nerves and bony structure are now shattered," Mado panted out, "and there is blood oozing from broken veins and arteries. We're near the bullet!"

Suddenly Don paused and pointed his flash with a steady hand.

"Look, Mado, at that monster," he gasped, "and it's coming toward us!"

Mado looked to behold a heart-stopping sight!

A mighty dragon-like reptile with huge fanged jaws and waving lobster-like pincers was plunging forward. It stopped to scoop several blood cells into its voracious mouth. Its evil phosphorus-like eyes gleamed evilly at Don and Mado and it began to move its armored, segmented loathsome body toward them.

"Get ready to fight!" yelled Mado. "It—it must be—a—a trypanosome!"

CHAPTER V

The Jungle of Life

- Every person's body, healthy or diseased, is a living zoo. No person is free from the millions of different sorts of animal parasites and even plant parasites living inside him, or her. These microscopic microbes, germs, and bacteria live quite merrily inside us and multiply with astounding prolificness. Most are quite harmless, but many are breeders of fatal or dangerous diseases for humans.

There is the acarus—a tiny creature that burrows into our skin to live—and to lay eggs. Pediculus is a little insect that lives in the human hair. These harmless chaps are quite large compared to the human microscopic parasites.

Among the most interesting and sometimes dangerous microscopic animals are the protozoa, such as the rhizopod, the flagellate, and the infusorian who live inside us—and that simplest of all animals,

the amoeba—all smaller than the very point of the sharpest needle!

And in your liver may dwell clonorchis sinensis. This human liver-fluke may attack you if you eat raw fish!

Our blood-stream is a veritable chamber of horrors! The deadly filaria, carrier of disease and one of the numerous trypanosome family, may get into your blood if you are bitten by an infected animal—for example, a rat—or by a thousand other sources. The red and white blood corpuscles of our blood are living, moving animals. Some of the disease germs resemble the vicious, fanged reptiles that roamed our earth ten million years ago. We even have living plants inside our bodies—parasitic plants! There is the aspergillus, a little fungus. Under a super-microscope it looks like a mushroom or toadstool with a very long stalk and a lot of glistening beads around its head. And there is the actinomyces, a tiny fungus that grows in the human throat.

These strange qualifying facts are recorded that you will appreciate the actual dangers to be encountered by Don and Mado on their strange adventure.

"Use your sword on its eyes!" shot out Don. "I'll bash its head with my axe! Unhook our chain so we won't get tangled up!"

"I'm ready," snapped Mado, watching the slowly-approaching germ monster, "but I wish now that we had brought pistols and ammunition!"

"We couldn't," explain Don. "I experimented with cartridges to reduce them; but the powder always exploded in the diminishing process. I'm unsnapping the chain!"

The great, uncouth beast slithered forward and suddenly lunged its ungainly head—as a cobra strikes! Its ponderous right pincer made an awkward but dangerous clutch at Don.

With a panther-like leap, in spite of his heavy helmet and bulky equipment, Don sprang to meet the monster as he dodged the closing pincer. With a shrewd, well-timed, and mighty swing, he struck viciously with his axe. The result proved

Don's skill and strength; the clashing right pincer was neatly sheared off close to the reptile's ugly head!

Don whirled and struck swiftly and surely at the remaining pincer, just as the reptile's fanged jaws clashed together barely above his swiftly-moving head! It was a narrow escape for Don, but he had, in two clever strokes, partly disabled the trypanosome.

Mado, in the meantime, was not idle. The brave surgeon leaped forward, sword in right hand, electric torch in left. Like a flash of light, his sword struck twice in flashing arcs and both eyes of the beast were suddenly pulpy, blinded masses! The germ reptile, blinded and hurt, began to thresh violently about—like a mortally wounded alligator in a tropical swamp!

Don and Mado sprang back to avoid being struck by the crazed reptile in its mighty convulsions. The two men had worked in perfect, timed unison in their combat with the microbe.

With quick signals, Don motioned to Mado to hold his light for him. Then, grasping his axe in both hands and watching for a chance, Don again leaped in to attack.

This time he struck several times, and each time the axe thudded sickeningly into the pain-maddened creature's head! No reptile, however tenacious, could withstand such punishment and its entire length quivered and slowly stretched out—to die!

Mado ran to Don's side and hooked up their chain. Both men, in their excitement, started to talk at once; but it was Mado's voice that prevailed.

"Don! What a fight! Are you all right? That beast is a trypanosome, a disease microbe—there are many different kinds, but I never saw one like that under the microscope! Why, he's sixty feet long—I mean he appears to be sixty feet long to us! I keep forgetting that we are tiny men. I hope we don't meet many of these fellows!"

With that oration delivered, Mado dragged Don over to the dying reptile that he might make a complete scientific in-

vestigation of the microbe for his future reference. Don recalled the research-loving Mado to the grim, important task at hand with impatient words.

"Come, Mado; we must hurry. I think I see the bullet ahead—and there's thousands of the blood cells now rushing in that direction!"

"Yes, of course," said Mado; "for the moment I forgot where we are. Yes; we're nearing the bullet. There's broken tissue and fractured bone structure all about us, and signs of congestion. The heat is greater, which indicates fever in this area. Look!—here's a splinter of bone which has pierced a nerve trunk. That splinter—and perhaps hundreds like it—is doing damage! Let's pull it out."

The nerve trunk was like a mighty tree with thousands of wiry branches without leaves. A large bone splinter had been driven half-way into the trunk—like a cyclone drives a plank into a tree!

• Both the powerful men grasped the bone splinter and heaved with all their strength; it was jerked from the nerve trunk. A white honey-like substance oozed from the trunk wound and instantly hardened over.

"The perfect surgery!" exclaimed Mado. "A crude job for us, but an impossible operation for a normal-sized surgeon! It's wonderful, Don!"

"I hope that did not hurt Joane," breathed Don, whose sturdy heart was always concerned for his betrothed.

"It couldn't have," assured Mado. "Human nerves have the happy faculty of creating a non-sensitive condition around a wounded area."

Don, now in the lead as they pushed and floundered through the close-packed intricate weave of things which make up human flesh, suddenly pointed his flashlight ahead and shouted.

"We've reached the bullet!"

It was true; directly ahead lay a mighty, rounded wall. To the two tiny men, the lead seemed to be a porous material resembling lump pumice stone. Even the dense element, lead, was a vast network of

tiny, tortuous holes! Don and Mado knew the mass was lead, but it was difficult for them to realize that the sponge-like material was the dense, smooth lead they knew as normal-sized men.

The area they were in now was a vast scene of wreckage; torn tissue, crushed bone material, severed nerves, and broken tendons were everywhere. It was as though a mighty comet had crashed through a thick jungle—a jungle which was the most weird and bizarre ever imagined by the mind of man, a steaming, humid, living thicket of strange plants and incredible life—and all orchestrated with an unearthly cacophony of shrill sounds. All was tinted with unheard-of colors—as if painted by an artist gone mad!

Thousands and thousands of red blood cells oozed around Don and Mado in the knee-deep blood plasma. The cells were working frantically to restore and rebuild crushed bone and injured tissue. By now, Don and Mado were quite accustomed to the red blood cells which appeared as six-foot animated globes.

Don had a sudden inspiration.

"Mado, if you're sure these red blood cells are carrying oxygen, I've got a plan to save our oxygen supply!" he said.

"And what is that?" asked Mado.

"We can puncture enough of the cells and release the oxygen they're carrying! Then we can open our helmets, shut off our precious oxygen, and breathe the oxygen the cells are bringing!"

"Splendid! Magnificent!" breathed Mado. "Let's try it. Open the cells that ooze from the arteries—they will have the oxygen fresh from Joane's lungs! Be careful at first—there may be carbonic acid in this atmosphere! Open a few cells here as they come through the artery walls and I'll try the air first."

Don and Mado slashed with their swords deeply into a hundred or more cells as they squeezed from the closest artery. As each cell was cut open it would lessen in size like a punctured balloon, and slither back into the artery. Don shouted as he cut into cell after cell.

"It does not kill them; they only reduce in size and slip back into the blood stream. I think we've punctured enough!"

Cautiously Mado opened his diving helmet, shut off his oxygen tanks, and carefully sniffed the air. The great surgeon fairly danced with joy and wonder.

"The air is all right, Don. It's heavy and sweet, but quite breathable! There must be some oxygen always present in this atmosphere! When we want more fresh air, all we have to do is to open more red cells!"

"Do you think it is dangerous to Joane's system to puncture so many of her red blood cells?" Don's question was a prayer.

"Nonsense!" replied Mado. "There are five million red blood cells to every cubic millimeter of blood in a human body! If we killed red blood cells for a hundred thousand years, we could not make any impression on the countless millions in Joane's blood stream!"

Both men found the new air supply quite satisfactory; and to be certain, they punctured a few more of the busy, ever-working red cells. With their helmets now open, the two men became suddenly conscious of the bedlam of strange and weird noises about them. It was like a symphony of Hades!

● As Don and Mado approached the great wall of lead, the hordes of red cells increased in numbers. These rebuilders of broken tissue had been called to the wounded area by some mysterious instinct.

The two men looked at the wall of lead and at the havoc and damage it had created in the incredible jungle of life.

Mado was first to speak.

"We have a mighty task before us, Don; we have to work all around this bullet. We must clear away broken bone splinters, amputate impinged nerves if we can't clear them, repair or suture severed blood vessels; and I must fix in my mind just how the bullet is located in its juxtaposition with the spinal cord. The last is supremely important, for when

we get back to be normal men in the laboratory, I can then operate safely and remove the bullet. We've got work to do, Don!"

"Let's get at it!" gritted Don. "You start and show me what to do."

Mado sprang aside to dodge a red blood cell that was undulating at him. Although both men felt by now that the red cells were absolutely harmless, they strove to avoid actual contact with them. As Mado dodged, he had the misfortune to trip over a wire-like tendon. As he fell, he instinctively thrust out his sword to catch his balance. The sword pierced a small artery! Mado withdrew the blade and the two watched a small globe of blood plasma appear at the wound.

"No harm done," hastened Mado, as Don pulled him to foot. "My tiny sword makes but a slight cut. Look out! There's a leucocyte—a white blood cell—coming out of the cut I made!"

A huge, swelling, pale cream colored globe was growing out of the artery—growing like an inner tube forcing itself through a ruptured automobile tire! The mass of the leucocyte expanded until it was an ominous-looking globe much larger than either of the two men. The vast corpuscle then rolled from the artery and quickly undulated to a small clearing in the live jungle.

"Watch it," Don exclaimed. "It may attack us. It's the same kind we battled in the incision!"

Then, while the two adventurers were watching with staring, incredulous eyes, the white blood cell performed a most amazing feat; its globe shape began to stretch out to a long oval; its center began to constrict smaller and smaller, until the leucocyte's mass was two complete spheres joined by a thin membrane!

"Shade of Chiron!" gasped Mado. "Don, this is the most astounding thing ever seen by man with the naked eye! The leucocyte is about to reproduce—to produce offspring! Many plant and animal cells have this strange power of multiplying by simply splitting themselves into two parts and thus forming two per-

fect and individual cells! This incredible process is called 'mitosis'."

Mado watched the cell suddenly divide into two cells—two perfect units which immediately undulated back into the nearest small artery! There was awe—almost reverence—in Mado's voice as he continued in academic tones.

"Imagine! Mitosis—and right before our eyes! I've watched the uncanny process in microscopes—a protoplasmic substance called chromatin forms a network at the center of the cell that is about to divide itself. Two centrosomes are enclosed in a centrosphere just above the nucleus of each cell. When the cell divides—to produce two new cells—each centrosome breaks away, but each retains one of the centrosomes for a new nucleus. Then the centrosome in each new cell divides in anticipation of the next cell division. It—"

Mado's technical scientific discourse was interrupted in a startling manner by Don's shouted alarm.

"Run for the lead wall, Mado! Here come two fearful microbe monsters to attack us!"

Mado and Don sprinted for the lead wall and its protecting caves. Close at their heels plunged two hideous monsters, huge spider-like creatures each with a score of waving tenuous legs!

CHAPTER VI

Herculean Labors

● Don leaped into a small cave-like hole in the lead bullet, with Mado close at his side. The two men instantly turned with ready swords to defend the small entrance of their retreat. Their stout hearts accelerated a bit at the sight of the two fearsome beasts that raged outside the cave!

The two microbe beasts were like Gargantuan tarantulas except that their bodies were spindle-shaped and each possessed a score of waving tentacles for legs. As they stormed about the opening of the cave, their shark-like mouths

clashed greedily, and their beady eyes stared hungrily at Don and Mado.

"Heavens!" gasped Don, "what kind of spiders are those? We're in for a scrap; it looks like they're going to stand guard and wait for us."

"They are germs," said Mado. "They look like typhosus bacillus!"

"But Joane would not have typhoid germs in her system," protested Don.

"She might," Mado insisted; "most human bodies contain nearly every kind of deadly germ. It is only when certain classes of germs gain supremacy by reason of vast numbers that the affected person suffers that particular kind of disease. I'm not sure these beasts are typhoid germs, but they surely resemble them. Watch out!—that one is trying to enter our cave."

One of the furious flagellates unwisely thrust its horrible head into the cave. Its vicious, greedy eyes blinked horribly and its slavering jaws crunched hungrily in anticipation of the two tender morsels it planned to devour.

The beast, finding it could not push its eager jaws into the cave, thrust in four exploring legs—tentacle-like, waving, feeling filaments!

Don, with two strokes of his sword, neatly amputated the four legs, but the microbe did not seem to mind the loss of a few appendages. The monster struggled until its broad, round head began to crowd into the cave opening!

Don and Mado stepped forward, and with powerful axe strokes began to hack with all their force and speed at the creature's head. In a trice, they opened a great, bloody hole in the repulsive head.

With a shrill, ear-piercing cry of agony, the injured microbe jerked its head from the cave and began to flounder about in its death-agonies. The other germ-monster immediately fell upon his unlucky companion and began to eat it with ferocious growls, but the dying microbe succeeded in obtaining a death grip on the other's throat. The two became a rolling, fighting tangle of legs.

"What are we going to do?" asked Don. "We can't stay here; we have work to do. Shall we jump out and kill the other microbe?"

Mado hesitated a moment before he replied.

"Those two devils are too busy to bother us. Let's walk right past them!"

It was a severe test of Don's and Mado's courage as they leaped from the cave and slipped past the struggling monsters.

"Wait!" hissed Mado, plunging his sword into a nearby artery. "I've an idea; I've punctured this artery! That will bring many leucocytes—white blood cells—to repair the damage; they will attack and devour the crippled trypanosomes! They are natural enemies. Look!—here they come now."

As Don and Mado watched from a safer distance, they saw two leucocytes appear, as if by magic, from the puncture! After a short interval, many more appeared, as though they had received an urgent message from the first two. In a few moments, there were scores of the white blood cells grouped about the puncture. Many had oozed through the artery walls near the wound.

Then, moving by some uncanny, unseen, or unheard signal, the entire group of leucocytes rushed undulating to attack the two struggling trypanosomes.

Don and Mado watched the awful spectacle in sheer amazement. The white blood cells instantly formed a large, round pulsating mass which entirely smothered and enfolded the microbe monsters.

"Heavens!" gasped Mado. "They're digesting the germs! That gives me another idea; these leucocytes are our enemies—they will instinctively attack us, thinking we are dangerous microbes; but, as we work, we can use them to advantage—to protect us and to scavenge after our surgery!"

Don paused to consider this remarkable idea. Of a sudden, he realized, more than ever before, how fortunate he was to have the learned and resourceful Mado as a partner in this desperate undertaking. Don spoke in a low voice.

"Mado, this job is going to be a success! I know it, and it will be so because you came with me. You—"

"Nonsense," interrupted the modest Mado. "Let's get to work."

Mado surveyed the vast and damaged jungle of life stretching before them with cool, analytical, experienced eyes. The brave surgeon was not daunted by the incredible task before them. For this surgery was not to be the precise, careful work to which he was trained; this labor was rough, hard work—the task of Heracles draining the Stymphalian swamps. Mado appraised the mighty job and suddenly fell to work without saying a word. He knew that Don was possessed of an unusual intelligence and that the young scientist would follow his example.

• The heavy surgical work, led by Mado, progressed slowly. The two toiled like men clearing away the thick undergrowth of a tangled jungle. Thousands of busy red blood cells crowded around the two men; but, by now, the men disregarded the working cells. Once, Don touched a red blood cell with an inquisitive hand, but the cell only rolled hastily away from him.

Don and Mado worked close to the lead bullet as they hacked, cut, and hewed their way through the living, pulsing tangle of things. It was surgery incredible! Huge splinters of bones were removed from tissue, veins, arteries, and nerves; torn and crushed nerve cables were sheared off with clean cuts that would heal readily and smoothly; bruised and mangled tissue was amputated away; nerve cables were untangled that the all-important brain impulses could constantly send messages to muscle fibres. As they worked along, Mado was carefully fixing in his mind the exact position of the bullet. Now and then, they would slash open a number of the red blood cells to release their precious burdens of oxygen. The result was always the same; the red cells would partly deflate, and then quickly disappear into the nearest artery—rarely into a vein.

Soon the two men came to a large

nerve trunk that was badly damaged; a large mass of splintered bone and lead had nearly severed the massive nerve trunk. Here, Don and Mado worked for two hours to chop away the impinging bone and lead. Finally the nerve trunk was clear and the men stopped for needed breath.

"There's an operation no surgeon ever even dreamed of performing!" Mado thought aloud in his enthusiasm. "Now the nerve will heal with the bone and lead splinters removed. We're not skilled surgeons at this task, but merely laborers at a salvaging job; we're only cleaning—" Mado suddenly shouted: "I've a great idea, Don; let's cut into arteries to bring the leucocytes out in great numbers! Don, you see, they are the watch-dogs of the blood stream; they are killers of microbes—they are scavengers! Think of that!—perfect surgery with millions of leucocytes at our beck and call to clean up and devour the waste and damaged material we cut away! And they will slay and eat all dangerous microbes; thus we can keep infection from starting. I tell you, Don, this is all simply too wonderful for words! Come on—let's bring the leucocytes—by the thousands!"

"Don't forget, Mado," warned Don "that the white blood cells will attack us too. But you know best. Here goes!"

"It's a great risk," admitted Mado, "but we must chance it. Maybe we can work fast enough to keep ahead of them. I feel sure the leucocytes will stop to eat up the damaged tissue we have already carved away." While Mado was speaking, he and Don had punctured a score of tiny arteries.

For a few minutes, nothing happened; then great globules began to swell from all nearby arteries as the fighting white blood cells began to materialize. Soon there were several hundred.

Don and Mado retreated to a safer distance and watched the cells from behind a large bone splinter. It was a tense moment; both men knew they were in a highly precarious position, should the cells attack them. And Don and Mado both had

an uncanny, mysterious, certain feeling that the intelligent cells were perfectly aware of their presence!

"What do you advise, Mado, if they attack us?" whispered Don. "Shall we jump into one of the lead caves in the bullet?"

"That would be no protection," answered Mado; "they could flow right into the smallest caves, and would then have us cornered! No, I think our best bet is to cut our way out of each one as it enfolds us. If they do attack, be sure to close your helmet and turn on your own oxygen. Look!—they're not going to rush us—not now, anyway! They're going to eat at the tissue, bone, and material we have cut away. Eureka!—the perfect surgery; they're eating up what we cut away. Let's get to work."

Don and Mado worked like men possessed; with skilful, mighty strokes, they chopped away crushed bone and neatly severed bruised tissue. The cut away pieces of tendon, bone, and sinew were thrown behind them and these scraps were quickly devoured by the trailing leucocytes. Mado and Don kept a close watch to the front and rear as they worked; they knew that the incredible jungle teemed with strange and vicious monsters that might attack them at any moment.

They floundered sturdily—always cutting, clearing, and chopping—through mushroom-like growths and weird orchid-like plants. Smaller—amazingly small—germs ran and slithered away from their approach. These tiny animals appeared as ants and large insects to Don and Mado. Mado had been observing these tiny creatures; they had challenged his academic, technical mind.

"Don, I've made a most amazing discovery!" Mado said, as he labored with a large, heavy bone splinter. "These tiny insects are germs, microbes—so small that man has never even dreamed of their existence. We are small as germs ourselves to a normal man. Think how unbelievably small these insect creatures really are. Remember, it would take a powerful microscope to see us—then consider the small-

ness of these insects. I tell you, Don, there is no limit to the smallness of things!"

Don did not reply; he only labored the harder; his heart was aching for the safety of Joane.

● Slowly the texture, composition, and color of the tissues about them began to change. The tissues were softer now and of an unearthly gray color; the going became much more difficult. As they progressed along the wall of the bullet, they noted that arteries, sinews, and bone slivers were not so much in evidence. They continued to cut, clear, and chop damaged tissues as they worked along the lead wall, which began to turn at a slow angle.

Suddenly Mado paused from his labor and glanced about with quick, appraising eyes. His excited voice startled Don.

"Don, look about us. We're in the spinal cord. Note the softer texture of the tissues, the gray color, and the scarcity of arteries and tendons—and we're at the edge of the bullet! Don't you see, Don? The spinal cord is not so seriously damaged as it might be! We can clear away the damaged tissue, and when we return to normal size, I can safely remove the bullet. It is highly important to amputate all nerves that touch the lead; we must join all torn arteries—" Mado continued in rapid, excited tones to give technical instructions.

"Mado," broke in Don, "the leucocytes are closing in right behind us! We had better get busy and provide more material for them to eat. It's like throwing meat to pursuing wolves."

"Eat—eat!" shot out Mado. "Don, we must eat something ourselves. Do you realize that we've been in Joane's body for thirty-six hours and that we have not eaten a thing in that time?"

The two men stopped for a brief rest; they swallowed some concentrated food tablets and drank from their small supply of water. Each had a small metal flask of water at his back and a rubber tube from it ran into each helmet. They kept a con-

stant watch on the leucocytes, which were gradually drawing closer as they worked at their task of eating damaged tissue. The vast horde of monsters was working uncomfortably close!

"How long do you think it will take us to clear all around the bullet?" asked Don.

Mado ruminated for a few minutes before he replied.

"I can't say, Don. We're making fine progress with the work and we've accomplished wonders of surgery. I now know the exact position of the bullet against the spinal cord. With two more days—possibly three—of hard work, I'm sure we can return to normal size and, without question, operate with success. There's no telling what dangers or difficulties we may encounter." Mado paused to think, and then continued.

"Now that we can get oxygen from the red blood cells, our trip is not limited to five days. So, if necessary, we can work longer than we planned. Don, when I return to normal size, I will really be a great surgeon!"

"You're a great surgeon now," hastened Don; "but you've forgotten one item—and that is our flash-lights! Whenever possible, I believe we had better burn only one at a time to save them, as we have been doing. Strange, but it's not entirely opaque in this flesh; but it is hardly light enough to get around—or work."

Don started back as an immense, snake-like reptile suddenly uncoiled from under a nearby mushroom-like thicket. The serpent resembled a boa-constrictor, except that its head was needle-pointed, and its slowly wriggling body was held in a position like an animated corkscrew. The reptile was a weird green color—a shade never before seen by Don or Mado. The animal opened its long, pointed mouth and hissed at the two adventurers. Fully fifty feet long it appeared to Don and Mado, and as the animal crawled along, it retained its corkscrew shape.

Then Mado spoke. "It's a spirillum—I think. Kill it—it's going to strike at you!"

Don, nearest the terrific snake, snapped his sword through the air—and the snake was instantly headless.

Gingerly stepping around the looping writhing carcass, Don and Mado continued with their rough—but infinitely fine—surgery. Don cast his light backward and informed Mado that the leucocyte were increasing in number and were now much closer.

"We'll have to work harder and provide more food for them," replied Mado.

• The two adventurers came to a great artery that appeared to be five feet in diameter to them—at least, it nearly reached Don's shoulder in height. A long large sliver of bone had been pushed through the artery and the sliver was protruding from both sides. Mado and Don grasped the splinter and heaved with all their strength. It was well that they were incredibly strong for their sizes, for the task called upon their every erg of energy. The great sliver pulled out and blood plasma began to flow in a large stream from the torn artery. In a moment, both men were knee-deep in the slowly moving plasmatic fluid.

"The blood will soon stop," said Mado. "It's really such a small artery that its bleeding is not important. Let's move on."

"Wait!" shouted Don, pointing his flashlight. "Look!—the leucocytes have increased in number and are all around us—they're closing in! This looks like trouble. They surrounded us while we were working at that bone sliver."

Mado, who was standing by the gash in the large artery, did not reply. Don thought his silence strange, and he turned to investigate just as he felt a mighty jerk on the stout chain which connected him to Mado.

Don beheld a heart-stopping sight—a great umbrella-like globe of a leucocyte was enfolded around Mado and the savage white blood cell was swiftly dragging Mado into the artery!

"Mado!" shouted Don, pulling with all his strength on the chain to help him. "Mado!—cut your way out! Cut! I'm

pulling on the chain to help you! Fight, Mado, fight!"

In spite of his strength, Don was dragged through the slippery blood toward the artery. With horrified eyes, Don saw the leucocyte flow relentlessly into the artery. His powerful light showed Mado struggling violently in the center of the protoplasmic-cell monster!

"Mado!" yelled Don frantically, as he was pulled steadily along as if hooked to a caterpillar tractor. "Cut! Use your sword!" Don knew now that the brave surgeon was in deadly peril. He began to struggle and pull back with super-human strength, for Mado's weak voice was registering on his racing brain.

"Don!" came Mado's weak, muffled tones, "the devil has me! It came—out of the artery behind me—I—did not see it until it had me smothered! It—it—flowed into my helmet—opening—and—choked me! I'm getting weak—Don—I—. It will pull you in—too! Unsnap the chain—and save yourself!"

"No, Mado," Don shouted as he was dragged by the powerful leucocyte to the very hole in the artery. "I won't unsnap the chain! Fight, Mado; cut your way out!" Don braced his powerful body against the artery and exerted the fullest measure of his splendid strength. Then Mado's voice came more weakly.

"Don, I'm unsnapping—the chain—to save—you! Goodbye—my boy!"

"No, Mado, no!" screamed Don, as he noted he was gaining in the gruesome tug-of-war with the huge protoplasm. Then, with startling force, Don was flung backwards as the heroic Mado unsnapped his end of the chain!

In a split-second, Don was on his feet; he leaped to the artery wound, but the gash was slowly closing! Mado was gone!

Don—nervy, resourceful fighter and adventurer that he was—was confounded and grieved; Mado, who had made the supreme sacrifice to save him, was in Joane's blood stream—trapped by a deadly leucocyte!

Like a flash, a sudden inspiration came to Don; he drew his sword and raised it, just as a slithering sound behind him caused him to turn. His torch swept in front of him and he beheld a new horror.

He was entirely circled by hundreds of the undulating leucocytes—and that deadly, protoplasmic circle was closing in upon him—relentlessly and inexorably as fate itself!

(What will happen to Don, now that Mado has been lost in Joane's blood-stream? Next month, in the concluding chapters of this exciting novel, you will find thrills aplenty.)

(Continued next month)

"IN MY OPINION"

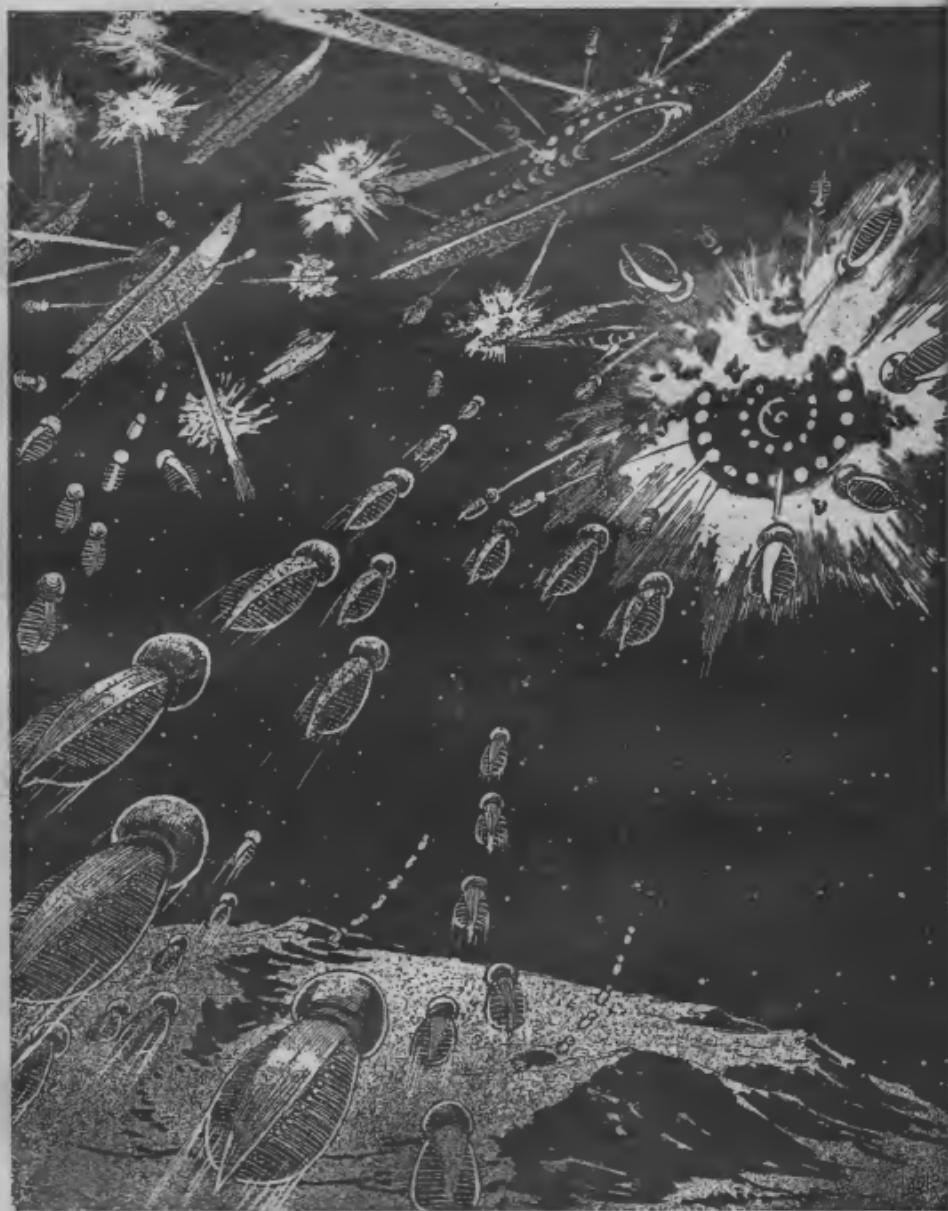
WE'D like to know just what you think of the stories in this issue. Below you will find several blank lines on which we would like you to write your opinion of the stories, why and how much you liked or disliked them. It will help us to give you just what you want if you will put your comments on this coupon or a facsimile. Roscs and brick-bats thankfully received.

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Name

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City and State



(Illustration by Paul)

Small, intelligent machines were swarming up to attack them.

THE MAD WORLD

By A. L. BURKHOLDER

• The alarm system was sending its mental impulses pulsating through the ship, stirring the great brains from their long continued state of suspended animation. The greatest and the most complex of all the brains, First Supervisory Intelligence, stirred as streams of memory surged through it, induced by the mental vibrations of the alarm system. Then suddenly wide-awake, the huge brain focused its optical organs upon the maze of instruments surrounding it and saw that fifty-three thousand years had elapsed since the beginning of their voyage—fifty-three thousand years at half the speed of light; they must be somewhere near the center of the galaxy and hence the going off of the automatic's mental alarm. The Second and Third Supervisory Intelligences were, already, attempting to establish mental contact with the First, and the different coördinating intelligences were beginning to signal that they awaited orders.

What memories flooded through these stupendous intellects! One hundred and twenty thousand sentairs (53,000 years) ago they had left a dead star in one of the globular clusters upon the outskirts of the Universe. There, untold aeons ago they had evolved upon the outer-most planet of a blazing sun. They had developed intellectually until they were literally a race of brains.

First Supervisory Intelligence was a mammoth brain, ten feet in length and about eight feet in width and depth. Upon its front part were three optical organs, each about six inches in diameter, through which the creature was able to view things four-dimensionally. These eyes were also capable of perceiving all etheric vibrations from well below the infra-red to well above the ultra-violet. Upon each side

• Every seasoned science-fiction fan has read dozens of tales concerning visits from extra-terrestrial beings. They have come in peace, in war, and indifference. Here we have another visit—but what an unusual one! These space-travellers from across the void receive an entirely different welcome than any other story has ever presented.

Every normal human being has five definite senses. We can hear, see, smell, feel, and taste. Some are supposed to be blessed with a sixth sense, though the exact nature of it is rather hazily explained—something like a gift of being able to tell what is going to happen. This is a rather unscientific idea.

Our author, who will be remembered for his "Dimensional Fate" in our August, 1934 number, shows us the possibility of a sixth sense that is more than convincing.

You will find this an interesting little tale by an author whose imagination is a thing to be proud of.

of the brain was a peculiar-shaped organ, through which it heard or received thought and mental vibrations: and upon the top of it were four ear-like organs, arranged in a diamond shape, and through these the creature heard sounds or auditory vibrations over a very wide range of wavelengths. All of the other brains were, in shape, exact replicas of this one but were, in size, somewhat smaller.

Each brain was enclosed in a hemisphere of transparent metal, and these hemispheres were fastened down upon the tops of upright cylinders made of an opaque, gray metal. These cylinders contained automatic machinery that transmuted the surrounding atmosphere (or any other available materials) into the gases, water, and predigested foods necessary for the creature in the hemisphere above and sent these necessities in the proper amounts through tubes into the brain. Waste materials came back through

other tubes, to be transmuted into useful materials again or else ejected from the apparatus. These machines also made, by transmutation of surrounding materials, their own fuel and lubricants—and each could, under the direction of the brain above it, effect minor repairs upon itself. Within limits, each machine kept its brain at a constant temperature, irrespective of what the surrounding temperature might be. The whole of each machine was under the absolute control of the brain it contained, which controlled it by means of mental impulses, much as our brains control our bodies. These machines were the artificial bodies that the intelligences had devised to supplement and then to completely replace the imperfect, natural bodies of flesh with which Nature had originally provided them ages before. They could be swiftly moved about through a gaseous or a liquid medium or through vacuum at the will of their occupants, the brains, by means of beams of pure force emitted from them. The same force beams were, also, used for moving and manipulating tools and other material objects outside of the apparatus. One of these remarkable mechanical bodies would function perfectly for over a million sentairs, but once in every hundred thousand sentairs, each brain was carefully removed from its machine and placed in a new one and the old one was then overhauled and repaired. By means of this wonderful method, the intelligence could live and function for millions of sentairs. New brains could, when needed, be bred artificially from a few live cells taken from some unimportant part of a brain.

Upon their original planet, they had thrived, built up a mighty civilization, and evolved to their present state of efficiency and perfection. As their sun had cooled, the frigid cold, the absolute zero, of inter-stellar space had slowly intruded upon them and had driven them from planet to planet, closer and closer to their dying sun. As their sun grew colder and its feeble rays died out completely, they had moved in and established themselves

upon its very surface, upon the burnt out cinder of their dead star. Neutralizing most of the effects of its tremendous gravity upon them, in order to make their weights bearable, they had lived upon it for untold ages and drove long tunnels into its very heart to get and utilize the last faint sparks of its once great store of heat and energy. The dead and useless planets were broken up and their materials transformed into heat and energy. The very material of the dead star, itself, was used for the same purpose until, when it was reduced to about five per cent of its original volume, the remnant of the race was being faced with the prospect of being left without a world to stand upon. In this extremity, they built and embarked in ten great space-ships and set out to find a new home. Setting their automatic machinery to pilot them to the center of the Galaxy, they placed themselves in a state of suspended animation in order to conserve their resources and to escape the unbearable monotony of a voyage that would last for many thousands of sentairs.

● Some thirty thousand sentairs later, the automatic alarms had aroused them and they found the cause was that they were passing close to a dead star from which thousands of small, intelligent machines were swarming up to attack them. In the ensuing battle, all of these were destroyed, but they had lost nine ships, leaving this one, the sole survivor and last hope of their race, to continue its quest. Now the alarms had aroused them again and, as it was the end of the time estimated for the trip, they must be at the center of the Universe and ready to begin their search in earnest. They numbered nine hundred and twelve brains in all—three supervisory intelligences, nine coördinating intelligences, and nine hundred specialized intelligences.

The Second Supervisory Intelligence emitted a long, thin beam of force from its mechanical body and touched a control with it, and instantly views of the space surrounding the ship appeared upon

screens. No enemy or other danger was visible, nor did the various other detecting instruments of the vessel reveal any, but dead ahead and about one and one half light years distant was a dwarf, yellow star surrounded by planets. All of the various detecting apparatuses were then turned upon it and it was discovered that the star in question was surrounded by eleven planets which rotated in a plane about it. The sixth planet was ringed, the fifth had a huge red spot upon it, the third was accompanied by a huge moon, several of the others had small satellites, and several had none at all. Between the fourth and the fifth planets, a stream of tiny planetoids and fragments rotated about the star.

A very careful analysis of the star's light revealed no deadly rays and surely one or more of these bodies would furnish at least a temporary home. At a mental command from the First Supervisory Intelligence, several of the specialized intelligences commenced the slow task of making several hundred new brains from some of the live cells brought in storage for that purpose. Then the three supervisory intelligences and the nine coördinating intelligences devoted themselves to the study of the approaching planetary system.

As they neared the star, they greatly checked their speed and steered in a great circle about it, far beyond the orbit of its outermost planet. Then further checking their velocity, in order to reduce the centrifugal force acting upon the ship, they allowed the gravity of the star to slowly drag them in toward it in a gradually closing spiral. The six outermost planets with their moons were found to be frozen and devoid of life, but the largest satellite of the fifth planet from the sun was discovered to be teeming with unintelligent creatures of very low orders. Leaving the plane of the planetary bodies, in order to pass safely over the whirl of planetoids and fragments rotating about the star between its fourth and fifth planets, and then returning to the plane, they approached the fourth planet.

It was a small world with two tiny moons revolving swiftly about it, and was apparently inhabited by intelligent creatures, for the detectors showed huge canals criss-crossing its surfaces and small points of light at their intersections. Nor did this life leave the intelligences long in doubt, for as the ship circled the planet in an orbit of about one hundred thousand miles radius, there was a tremendous flash upon the nearer of its moons and a large ship rushed out to meet them. The supervisory intelligences swiftly swung their vessel away at an angle, but the other craft immediately altered its course and a collision seemed imminent. Hurriedly, the Third Supervisory Intelligence actuated certain complex machines and great repellor beams shot out, seized the other ship, and forced it from its course so that it passed harmlessly out into space. At a distance of some seventy thousand miles, the vessel from the fourth planet suddenly exploded and sent great sheets of flame and millions of fragments flying for thousands of miles in all directions. Hardly had this happened than a great beam of force flashed out from the planet itself, seized the invading ship, and commenced to drag it slowly down toward the surface of the planet. Third Supervisory Intelligence then hurled a mental impulse at a huge machine and it roared into life, sending great force shields flashing out around the vessel and thus cutting off the attractor beam.

The denizens of the fourth planet were certainly showing, in no unmistakable manner, their unwillingness to submit peacefully to either investigation or invasion.

The invading space-ship then darted in between the two small moons and, catching hold of both with great attractor rays, began to pull them together. Slowly they gained speed and then faster and faster they hurtled at the great space-craft between them. At the last moment, the intelligences cut off their pulling forces and sent their ship darting out from its perilous position. The two satellites crashed together behind it and a great blob of in-

candescent material, that had been two moons, fell like a plummet to the planet below, where it made a great, smoking crater.

"That should teach those puny creatures not to try to match their feeble minds against what are probably the greatest minds in the Galaxy," the Third Supervisory Intelligence thought as the ship moved on toward the orbit of the third world from the sun.

• The third planet was larger than the fourth and three-fourths of its surface proved to be covered with water. It was accompanied by one huge moon which the detectors showed to be airless and lifeless. The planet itself was plainly inhabited by intelligent life, for the detectors showed scattered patches of light upon the land and from time to time a tiny, moving pinpoint of light upon the sea, in the dark half of the world where night prevailed. A study of nature of this light revealed to their super-science that it came from metal, rendered incandescent by passing a stream of electrons over it.

The First Supervisory Intelligence reflected that many aeons past, when its own race had newly arisen from the primeval slime of their first planet and still walked their little primitive brains about upon the crude muscular contrivances that Nature had originally furnished to them for bodies then, they too had used electricity for purposes of lighting and power.

"A good temporary home," thought the three supervisory intelligences. "A fairly young world, rich in material resources, and a hot star to furnish light, heat and power. Nearby a large moon—a veritable storehouse of materials for transmutation into needed substances and for transformation into energy. Here the race would dwell for ages and create great numbers of new brains; with this planet as a base, they would soon conquer the entire system and then reach out for other stars."

Upon one side of the planet were two great masses of land, extending nearly from pole to pole and joined together by

a narrow neck of land. At one corner of the geographically topmost one and upon the side toward the direction of the planet's rotation was a peninsula of soft, swampy land.

"An excellent place to stop," thought First Supervisory Intelligence.

The great ship entered the planet's atmosphere and, decelerating rapidly, rushed down to a perfect landing with its outer shell glowing from friction with the gases composing the planet's shell of air. It was a perfect landing at exactly the predetermined spot and at last, after a hundred and twenty thousand sentays of travel, the great craft had come to rest.

But all was not well; for hardly had the ship penetrated the atmosphere when a mental bedlam broke loose. Every brain and nervous system upon the entire planet seemed to be so constituted that it broadcasted its thoughts and emotions as a radio transmitter broadcasts radio waves. What thoughts these creatures had! What a hell of passion and emotion this planet seemed to be! Powerful, but incomprehensible, mental impulses and vibration from billions of primitive brains assailed the telepathy organs of the intelligences and tortured their minds. Madness lurked everywhere!

Could not these creatures prevent the escape of their mental vibrations? Why did not this bedlam of their own creation drive them insane? Could it be that they were not provided with natural organs to receive thought from others?

Already, the simpler and weaker of the great brains, the nine hundred specialized intelligences, were going insane under strain of this mental tumult of idiocy and viciousness.

Unceasingly, the weird thoughts beat in upon them. Now a scaly quadruped stalked a hairy quadruped to kill it. Now two hairy bipeds fought to the death over the question of which of them should coöperate with a third hairy biped in order to in some mysterious manner create a small, fourth biped. Here a strange, winged creature circled in the atmosphere

and watched the ground for small, six legged creatures, which it caught and devoured. Here a hairless biped stood before a group of its own kind and supplicated an imaginary power above the atmosphere to grant certain favors to it and to its fellows and, at the same time, wondered what sort of creatures, plant and animal, would be served it to eat later in the day.

Hate, love, greed, lust, loyalty, treachery, and violence were everywhere. Occasionally, there came a lucid and almost intelligent thought, but the bulk were sheer insane ravings.

In one of the power generating compartments of the ship, Specialized Intelligence Second of Material Mechanism suddenly, in an insane fit, hurled itself across the compartment and against the metal wall. It and its mechanical body were completely destroyed by the impact, so sudden and violent was its mad act. In a storage compartment, three specialized intelligences fought a battle royal with their force beams until they were suddenly rendered unconscious by powerful mental vibrations emitted, for the purpose, by several of the coördinating intelligences. Fifth Coördinating Intelligence was suddenly killed by a crazed specialized intelligence.

The specialized intelligence had all gone insane and even the eight surviving coördinating intelligences were beginning to behave in an erratic and untrustworthy manner. The three supervisor intelligences fought desperately for sanity against the overwhelming flood of mad mental vibrations that beat upon their laboring brains. Something had to be done! They must flee and that quickly, First Supervisory Intelligence decided, or else they would

all die of madness. Even First Supervisory Intelligence's mighty mind was reeling and strange ideas would come to it in unguarded moments.

The combined will-powers of the three supervisory intelligences strove to subjugate and control the wandering minds of the coördinating intelligences and to force them back to their duties, in order that the craft might take off and leave this madhouse of a world. What a battle it was! The surrounding space seemed warped and bent by the tremendous mental forces emitted by these three titanic minds; even the bedlam from outside of the ship was occasionally drowned out by the great thought vibrations they emitted! Little by little the fight was won, and one by one the coördinating intelligences were brought under control and lent their aid.

The machines were finally started and, jerkily and uncertainly, the great space-craft arose from the ground and left the atmosphere. Once outside of the planet's atmosphere air-blanket, the bedlam died out and a few thousand miles out in space, absolute mental peace prevailed.

One coördinating intelligence and several of the specialized intelligences had been destroyed, either by themselves or by others, and several more specialized intelligences were hopelessly and completely insane and had to be destroyed by the coördinating intelligences. But the majority speedily recovered their reason and resumed their duties.

Far to the rear, the accursed yellow star and its mad world receded in the distance. The Intelligences were leaving the crazy system forever, to seek a more suitable home of some fairer star.

THE END

TO OUR READERS

You will note that there has been no number of **WONDER STORIES** dated January, 1936. The issues for January and February have been combined into this one number dated February, 1936.



(Illustration by Marchionni)

What I saw was quite indescribable. I was completely dazed and bewildered.

THE POINT OF VIEW

By

STANLEY G. WEINBAUM

• "I am too modest!" snapped the great Haskel van Manderpootz, pacing irritably about the limited area of his private laboratory, glaring at me the while. "That is the trouble. I undervalue my own achievements, and thereby permit petty imitators like Corveille to influence the committee and win the Morell prize."

"But," I said soothingly, "you've won the Morell physics award half a dozen times, professor. They can't very well give it to you every year."

"Why not, since it is plain that I deserve it?" bristled the professor. "Understand, Dixon, that I do not regret my modesty, even though it permits conceited fools like Corveille, who have infinitely less reason than I for conceit, to win awards that mean nothing save prizes for successful bragging. Bah! To grant an award for research along such obvious lines that I neglected to mention them, thinking that even a Morell judge would appreciate their obviousness! Research on the psychon, eh! Who discovered the psychon? Who but van Manderpootz?"

"Wasn't that what you got last year's award for?" I asked consolingly. "And after all, isn't this modesty, this lack of jealousy on your part, a symbol of greatness of character?"

"True—true!" said the great van Manderpootz, mollified. "Had such an affront been committed against a lesser man than myself, he would doubtless have entered a bitter complaint against the judges. But not I. Anyway, I know from experience that it wouldn't do any good. And besides, despite his greatness, van Manderpootz is as modest and shrinking as a

● Van Manderpootz is the greatest scientist that has ever lived, that is living, and that ever could live. He has told us that himself in the former stories about his experiments, "The Worlds of If" and "The Ideal," published recently.

We find him here again with his latest brain-storm. He calls it the "attitudinizer," and what it does and how it works will astound you. Only van Manderpootz could have thought up such a thing.

Do you like olives? If you do, the sight of them is very pleasing, but if you don't, they are exceedingly repulsive to look at. Let the van Manderpootz tell you the hows and whys of this condition in one of Stanley G. Weinbaum's best stories—and that's saying a lot, considering the standard of all his work.

Weinbaum was the best-liked short-story science-fiction author of 1934 and, by the looks of things, he is going to retain that honor indefinitely.

violet." At this point he paused, and his broad red face tried to look violet-like.

I suppressed a smile. I knew the eccentric genius of old, from the days when I had been Dixon Wells, undergraduate student of engineering, and had taken a course in Newer Physics (that is, in Relativity) under the famous professor. For some unguessable reason, he had taken a fancy to me, and as a result, I had been involved in several of his experiments since graduation. There was the affair of the subjunctivisor,* for instance, and also that of the idealizator;** in the first of these episodes I had suffered the indignity of falling in love with a girl two weeks after she was apparently dead, and in the second, the equal or greater indignity of falling in love with a girl who didn't exist, never had existed, and never would exist—in other words,

*"The Worlds of If," August, 1935, WONDER STORIES.

**"The Ideal," September, 1935, WONDER STORIES.

with an ideal. Perhaps I'm a little susceptible to feminine charms, or rather, perhaps I used to be, for since the disaster of the idealizator, I had sworn grimly to relegate such follies to the past, much to the disgust of various 'vision entertainers, singers, dancers, and the like.

So of late I had been spending my days very seriously, trying wholeheartedly to get to the office on time just once, so that I could refer to it next time my father accused me of never getting anywhere on time. I hadn't succeeded yet, but fortunately the N. J. Wells Corporation was wealthy enough to survive even without the full-time services of Dixon Wells, or should I say even *with* them? Anyway, I'm sure my father preferred to have me late in the morning after an evening with van Manderpootz than after one with Tips Alva or Whimsy White, or one of the numerous others of the ladies of the 'vision screen. Even in the twenty-first century, he retained a lot of old-fashioned ideas.

Van Manderpootz had ceased to remember that he was as modest and shrinking as a violet. "It has just occurred to me," he announced impressively, "that years have character much as humans have. This year, 2015, will be remembered in history as a very stupid year, in which the Morell prize was given to a nincompoop. Last year, on the other hand, was a very intelligent year, a jewel in the crown of civilization. Not only was the Morell prize given to van Manderpootz, but I announced my discrete field theory in that year, and the University unveiled Gogli's statue of me as well." He sighed. "Yes, a very intelligent year! What do you think?"

"It depends on how you look at it." I responded glumly. "I didn't enjoy it so much, what with Joanna Caldwell and Denise d'Agrion, and your infernal experiments. It's all in the point of view."

The professor snorted. "Infernal experiments, eh! Point of view! Of course it's all in the point of view. Even Einstein's simple little synthesis was enough to prove that. If the whole world could

adopt an intelligent and admirable point of view—that of van Manderpootz, for instance—all troubles would be over. If it were possible—" He paused, and an expression of amazed wonder spread over his ruddy face.

"What's the matter?" I asked.

"Matter? I am astonished! The astounding depths of genius awe me. I am overwhelmed with admiration at the incalculable mysteries of a great mind."

"I don't get the drift."

"Dixon," he said impressively, "you have been privileged to look upon an example of the workings of genius. More than that, you have planted the seed from which perhaps shall grow the towering tree of thought. Incredible as it seems, you, Dixon Wells, have given van Manderpootz an idea! It is thus that genius seizes upon the small, the unimportant, the negligible, and turns it to its own grand purposes. I stand awe-struck!"

"But what—?"

"Wait," said van Manderpootz, still in rapt admiration of the majesty of his own mind. "When the tree bears fruit, you shall see it. Until then, be satisfied that you have played a part in its planting."

● It was perhaps a month before I saw van Manderpootz again, but one bright spring evening his broad, rubicund face looked out of the phone-screen at me.

"It's ready," he announced impressively.

"What is?"

The professor looked pained at the thought that I could have forgotten. "The tree has borne fruit," he explained. "If you wish to drop over to my quarters, we'll proceed to the laboratory and try it out. I do not set a time, so that it will be utterly impossible for you to be late."

I ignored that last dig, but had a time been set, I would doubtless have been even later than usual, for it was with some misgivings that I induced myself to go at all. I still remembered the unpleasantness of my last two experiences with the inventions of van Manderpootz. However, at last we were seated in the small labora-

tory, while out in the larger one the professor's technical assistant, Carter, puttered over some device, and in the far corner his secretary, the plain and unattractive Miss Fitch, transcribed lecture notes, for van Manderpootz abhorred the thought that his golden utterances might be lost to posterity. On the table between the professor and myself lay a curious device, something that looked like a cross between a pair of nose-glasses and a miner's lamp.

"There it is," said van Manderpootz proudly. "There lies my attitudinizor, which may well become an epoch-making device."

"How? What does it do?"

"I will explain. The germ of the idea traces back to that remark of yours about everything depending on the point of view. A very obvious statement, of course, but genius seizes on the obvious and draws from it the obscure. Thus the thoughts of even the simplest mind can suggest to the man of genius his sublime conceptions, as is evident from the fact that I got this idea from you."

"What idea?"

"Be patient. There is much you must understand first. You must realize just how true is the statement that everything depends on the point of view. Einstein proved that motion, space, and time depend on the particular point of view of the observer, or as he expressed it, on the scale of reference used. I go farther than that, infinitely farther. I propound the theory that the observer is the point of view. I go even beyond that. I maintain that the world itself is merely the point of view!"

"Huh?"

"Look here," proceeded van Manderpootz. "It is obvious that the world I see is entirely different from the one in which you live. It is equally obvious that a strictly religious man occupies a different world than that of a materialist. The fortunate man lives in a happy world; the unfortunate man sees a world of misery. One man is happy with little, another is

miserable with much. Each sees the world from his own point of view, which is the same as saying that each lives in his own world. Therefore there are as many worlds as there are points of view."

"But," I objected, "that theory is to disregard reality. Out of all the different points of view, there must be one that is right, and all the rest are wrong."

"One would think so," agreed the professor. "One would think that between the point of view of you, for instance, as contrasted with that of, say van Manderpootz, there would be small doubt as to which was correct. However, early in the twentieth century, Heisenberg enunciated his Principle of Uncertainty, which proved beyond argument that a completely accurate scientific picture of the world is quite impossible, that the law of cause and effect is merely a phase of the law of chance, that no infallible predictions can ever be made, and that what science used to call natural laws are really only descriptions of the way in which the human mind perceives nature. In other words, the character of the world depends entirely on the mind observing it, or, to return to my earlier statement, the point of view."

"But no one can ever really understand another person's point of view," I said. "It isn't fair to undermine the whole basis of science because you can't be sure that the color we both call red wouldn't look green to you if you could see it through my eyes."

"Ah!" said van Manderpootz triumphantly. "So we come now to my attitudinizor. Suppose that it were possible for me to see through your eyes, or you through mine. Do you see what a boon such an ability would be to humanity? Not only from the standpoint of science, but also because it would obviate all troubles due to misunderstandings. And even more." Shaking his finger, the professor recited oracularly, "Oh, wad some pow'r the giftie gie us to see oursel's as ither see us." Van Manderpootz is that power, Dixon. Through my attitudinizor, one may at last adopt the viewpoint of an-

other. The poet's plaint of more than two centuries ago is answered at last."

"Now how the devil do you see through somebody else's eyes?"

"Very simply. You will recall the idealizator. Now it is obvious that when I peered over your shoulder and perceived in the mirror your conception of the ideal woman, I was, to a certain extent, adopting your point of view. In that case the psychons given off by your mind were converted into quanta of visible light, which could be seen. In the case of my attitudinizor, the process is exactly reversed. One flashes the beam of this light on the subject whose point of view is desired; the visible light is reflected back with a certain accompaniment of psychons, which are here intensified to a degree which will permit them to be, so to speak, appreciated."

"Psychons?"

Have you already forgotten my discovery of the unit particle of thought? Must I explain again how the cosmons, chronons, spations, psychons, and all other particles are interchangeable? And that," he continued abstractedly, "leads to certain interesting speculations. Suppose I were to convert, say, a ton of material protons and electrons into spations—that is, convert matter into space. I calculate that a ton of matter will produce approximately a cubic mile of space. Now the question is, where would we put it, since all the space we have is already occupied by space? Or if I manufactured an hour or two of time? It is obvious that we have no time to fit in an extra couple of hours, since all our time is already accounted for. Doubtless it will take a certain amount of thought for even van Manderpootz to solve these problems, but at the moment I am curious to watch the workings of the attitudinizor. Suppose you put it on, Dixon."

"I? Haven't you tried it out yet?"

"Of course not. In the first place, what has van Manderpootz to gain by studying the viewpoints of other people? The object of the device is to permit people to study nobler viewpoints than their own. And in the second place, I have asked my-

self whether it is fair to the world for van Manderpootz to be the first to try out a new and possibly untrustworthy device, and I reply, 'No!'"

"But I should try it out, eh? Well, every time I try out any of your inventions I find myself in some kind of trouble. I'd be a fool to go around looking for more difficulty, wouldn't I?"

"I assure you that *my* viewpoint will be much less apt to get you into trouble than *your* own," said van Manderpootz with dignity. "There will be no question of your becoming involved in some impossible love affair as long as you stick to that."

• Nevertheless, despite the assurance of the great scientist, I was more than a little reluctant to don the device. Yet I was curious as well; it seemed a fascinating prospect to be able to look at the world through other eyes, as fascinating as visiting a new world—which it was, according to the professor. So after a few moments of hesitation, I picked up the instrument, slipped it over my head so that the eyeglasses were in the proper position, and looked inquiringly at van Manderpootz.

"You must turn it on," he said, reaching over and clicking a switch on the frame. "Now. Now flash the light to my face. That's the way; just center the circle of light on my face. And now what do you see?"

I didn't answer; what I saw was, for the moment, quite indescribable. I was completely dazed and bewildered, and it was only when some involuntary movement of my head at last flashed the light from the professor's face to the table top that a measure of sanity returned, which proves at least that tables do not possess any point of view.

"O-o-o-h!" I gasped.

Van Manderpootz beamed. "Of course you are overwhelmed. One could hardly expect to adopt the view of van Manderpootz without some difficulties of adjustment. A second time will be easier."

I reached up and switched off the light. "A second time will be not only easier,

but also impossible," I said crossly. "I'm not going to experience another dizzy spell like that for anybody."

"But of course you will, Dixon. I am certain that the dizziness will be negligible on the second trial. Naturally the unexpected heights affected you, much as if you were to come without warning to the brink of a colossal precipice. But this time you will be prepared, and the effect will be much less."

Well, it was. After a few moments I was able to give my full attention to the phenomena of the attitudinizer, and queer phenomena they were, too. I scarcely know how to describe the sensation of looking at the world through the filter of another's mind. It is almost an indescribable experience, but so, in the ultimate analysis, is any other experience.

What I saw first was a kaleidoscopic array of colors and shapes, but the amazing, astounding, inconceivable thing about the scene was that there was no single color I could recognize! The eyes of van Manderpootz, or perhaps his brain, interpreted color in a fashion utterly alien to the way in which my own functioned, and the resultant spectrum was so bizarre that there is simply no way of describing any single tint in words. To say, as I did to the professor, that his conception of red looked to me like a shade between purple and green conveys absolutely no meaning, and the only way a third person could appreciate the meaning would be to examine my point of view through an attitudinizer while I was examining that of van Manderpootz. Thus he could apprehend my conception of van Manderpootz's reaction to the color red.

And shapes! It took me several minutes to identify the weird, angular, twisted, distorted appearance in the center of the room as the plain laboratory table. The room itself, aside from its queer form, looked smaller, perhaps because van Manderpootz is somewhat larger than I.

But by far the strangest part of his point of view had nothing to do with the outlook upon the physical world, but with the more fundamental elements—with his

attitudes. Most of his thoughts, on that first occasion, were beyond me, because I had not yet learned to interpret the personal symbolism in which he thought. But I did understand his attitudes. There was Carter, for instance, toiling away out in the large laboratory; I saw at once what a plodding, unintelligent drudge he seemed to van Manderpootz. And there was Miss Fitch; I confess that she had always seemed unattractive to me, but my impression of her was Venus herself beside that of the professor! She hardly seemed human to him, and I am sure that he never thought of her as a woman, but merely as a piece of convenient but unimportant laboratory equipment.

At this point I caught a glimpse of myself through the eyes of van Manderpootz. Ouch! Perhaps I'm not a genius, but I'm dead certain that I'm not the grinning ape I appeared to be in his eyes. And perhaps I'm not exactly the handsomest man in the world either, but if I thought I looked like that! And then, to cap the climax, I apprehended van Manderpootz's conception of himself!

"That's enough!" I yelled. "I won't stay around here just to be insulted. I'm through!"

I tore the attitudinizer from my head and tossed it to the table, feeling suddenly a little foolish at the sight of the grin on the face of the professor.

"That is hardly the spirit which has led science to its great achievements, Dixon," he observed amiably. "Suppose you describe the nature of the insults, and if possible, something about the working of the attitudinizer as well. After all, that is what you were supposed to be observing."

I flushed, grumbled a little, and complied. Van Manderpootz listened with great interest to my description of the differences in our physical worlds, especially the variations in our perceptions of form and color.

"What a field for an artist!" he ejaculated at last. "Unfortunately, it is a field that must remain forever untapped, because even though an artist examined a thousand viewpoints and learned in-

numerable new colors, his pigments would continue to impress his audience with the same old colors each of them had always known." He sighed thoughtfully, and then proceeded. "However, the device is apparently quite safe to use. I shall therefore try it briefly, bringing to the investigation a calm, scientific mind which refuses to be troubled by the sort of trifles that seem to bother you."

He donned the attitudinizer, and I must confess that he stood the shock of the first trial somewhat better than I did. After a surprised "Oof!" he settled down to a complacent analysis of my point of view, while I sat somewhat self-consciously under his calm appraisal. Calm, that is, for about three minutes.

Suddenly he leaped to his feet, tearing the device from a face whose normal rudeness had deepened to a choleric angry color. "Get out!" he roared. "So that's the way van Manderpootz looks to you! Moron! Idiot! Imbecile! Get out!"

• It was a week or ten days later that I happened to be passing the University on my way from somewhere to somewhere else, and I fell to wondering whether the professor had yet forgiven me. There was a light in the window of his laboratory over in the Physics Building, so I dropped in, making my way past the desk where Carter labored, and the corner where Miss Fitch sat in dull primness at her endless task of transcribing lecture notes.

Van Manderpootz greeted me cordially enough, but with a curious assumption of melancholy in his manner. "Ah, Dixon," he began, "I am glad to see you. Since our last meeting I have learned much of the stupidity of the world, and it appears to me now that you are actually one of the more intelligent contemporary minds."

This from van Manderpootz! "Why—thank you," I said.

"It is true. For some days I have sat at the window overlooking the street there, and have observed the viewpoints of the passers-by. Would you believe"—his voice lowered—"would you believe that

only seven and four-tenths per cent are even aware of the *existence* of van Manderpootz? And doubtless many of the few that are come from among the students in the neighborhood. I knew that the average level of intelligence was low, but it had not occurred to me that it was as low as that."

"After all," I said consolingly, "you must remember that the achievements of van Manderpootz are such as to attract the attention of the intelligent few rather than of the many."

"A very silly paradox!" he snapped. "On the basis of that theory, since the higher one goes in the scale of intelligence, the fewer individuals one finds, the greatest achievement of all is one that *nobody* has heard of. By that test you would be greater than van Manderpootz, an obvious *reductio ad absurdum*."

He glared his reproof that I should even have thought of the point, then something in the outer laboratory caught his ever-observant eye.

"Carter!" he roared. "Is that a synobasical interphasometer in the positronic flow? Fool! What sort of measurements do you expect to make when your measuring instrument itself is part of the experiment? Take it out and start over!"

He rushed away toward the unfortunate technician. I settled idly back in my chair and stared about the small laboratory, whose walls had seen so many marvels. The latest, the attitudinizer, lay carelessly on the table, dropped there by the professor after his analysis of the mass viewpoint of the pedestrians in the street below.

I picked up the device and fell to examining its construction. Of course this was utterly beyond me, for no ordinary engineer can hope to grasp the intricacies of a van Manderpootz concept. So, after a puzzled but admiring survey of its infinitely delicate wires and grids and lenses, I made the obvious move. I put it on.

My first thought was the street, but since the evening was well along, the walk below the window was deserted. Back in my chair again, I sat musing idly when a

faint sound that was not the rumbling of the professor's voice attracted my attention. I identified it shortly as the buzzing of a heavy fly, butting its head stupidly against the pane of glass that separated the small laboratory from the large room beyond. I wondered casually what the viewpoint of a fly was like, and ended by flashing the light on the creature.

For some moments I saw nothing other than I had been seeing right along from my own personal point of view, because, as van Manderpootz explained later, the psychons from the miserable brain of a fly are too few to produce any but the vaguest of impressions. But gradually I became aware of a picture, a queer and indescribable scene.

Flies are color-blind. That was my first impression, for the world was a dull panorama of greys and whites and blacks. Flies are extremely near-sighted; when I had finally identified the scene as the interior of the familiar room, I discovered that it seemed enormous to the insect, whose vision did not extend more than six feet, though it did take in almost a complete sphere, so that the creature could see practically in all directions at once. But perhaps the most astonishing thing, though I did not think of it until later, was that the compound eye of the insect did not convey to it the impression of a vast number of separate pictures, such as the eye produces when a microphotograph is taken through it. The fly sees one picture just as we do; in the same way as our brain rights the upside-down image cast on our retina, the fly's brain reduces the compound image to one. And beyond these impressions were a wild hodge-podge of smell-sensations, and a strange desire to burst through the invisible glass barrier into the brighter light beyond. But I had no time to analyze these sensations, for suddenly there was a flash of something infinitely clearer than the dim cerebrations of a fly.

• For half a minute or longer I was unable to guess what that momentary flash had been. I knew that I had seen something incredibly lovely, that I had

tapped a viewpoint that looked upon something whose very presence caused ecstasy, but whose viewpoint it was, or what that flicker of beauty had been, were questions beyond my ability to answer.

I slipped off the attitudinizer and sat staring perplexedly at the buzzing fly on the pane of glass. Out in the other room van Manderpootz continued his harangue to the repentent Carter, and off in a corner invisible from my position I could hear the rustle of papers as Miss Fitch transcribed endless notes. I puzzled vainly over the problem of what had happened, and then the solution dawned on me.

The fly must have buzzed between me and one of the occupants of the outer laboratory. I had been following its flight with the faintly visible beam of the attitudinizer's light, and that beam must have flickered momentarily on the head of one of the three beyond the glass. But which? Van Manderpootz himself? It must have been either the professor or Carter, since the secretary was quite beyond range of the light.

It seemed improbable that the cold and brilliant mind of van Manderpootz could be the agency of the sort of emotional ecstasy I had sensed. It must, therefore, have been the head of the mild and inoffensive little Carter that the beam had tapped. With a feeling of curiosity I slipped the device back on my own head and sent the beam sweeping dimly into the larger room.

It did not at the time occur to me that such a procedure was quite as discreditable as eavesdropping, or even more dishonorable, if you come right down to it, because it meant the theft of far more personal information than one could ever convey by the spoken word. But all I considered at the moment was my own curiosity; I wanted to learn what sort of viewpoint could produce that strange, instantaneous flash of beauty. If the proceeding was unethical—well, Heaven knows I was punished for it.

So I turned the attitudinizer on Carter. At the moment, he was listening respect-

fully to van Manderpootz, and I sensed clearly his respect for the great man, a respect that had in it a distinct element of fear. I could hear Carter's impression of the booming voice of the professor, sounding somewhat like the modulated thunder of a god, which was not far from the little man's actual opinion of his master. I perceived Carter's opinion of himself, and his self-picture was an even more mouse-like portrayal than my own impression of him. When, for an instant, he glanced my way, I sensed his impression of me, and while I'm sure that Dixon Wells is not the imbecile he appears to van Manderpootz, I'm equally sure that he's not the debonair man of the world he seemed to Carter. All in all, Carter's point of view seemed that of a timid, inoffensive, retiring, servile little man, and I wondered all the more what could have caused that vanished flash of beauty in a mind like his.

There was no trace of it now. His attention was completely taken up by the voice of van Manderpootz, who had passed from a personal appraisal of Carter's stupidity to a general lecture on the fallacies of the unified field theory as presented by his rivals Corveille and Shrimski. Carter was listening with an almost worshipful regard, and I could feel his surges of indignation against the villains who dared to disagree with the authority of van Manderpootz.

I sat there intent on the strange double vision of the attitudinizor, which was in some respects like a Horsten psychomat—that is, one is able to see both through his own eyes and through the eyes of his subject. Thus I could see van Manderpootz and Carter quite clearly, but at the same time I could see or sense what Carter saw and sensed. Thus I perceived suddenly through my own eyes that the professor had ceased talking to Carter, and had turned at the approach of somebody as yet invisible to me, while at the same time, through Carter's eyes, I saw that vision of ecstasy which had flashed for a moment in his mind. I saw—description is utterly impossible, but I saw a woman

who, except possibly for the woman of the idealizator screen, was the most beautiful creature I had ever seen!

I say description is impossible. That is the literal truth, for her coloring, her expression, her figure, as seen through Carter's eyes, were completely unlike anything expressible by words. I was fascinated. I could do nothing but watch, and I felt a wild surge of jealousy as I caught the adoration in the attitude of the humble Carter. She was glorious, magnificent, indescribable. It was with an effort that I untangled myself from the web of fascination enough to catch Carter's thought of her name. "Lisa," he was thinking. "Lisa."

What she said to van Manderpootz was in tones too low for me to hear, and apparently too low for Carter's ears as well, else I should have heard her words through the attitudinizor. But both of us heard van Manderpootz's bellow in answer.

"I don't care how the dictionary pronounces the word!" he roared. "The way van Manderpootz pronounces a word is right!"

The glorious Lisa turned silently and vanished. For a few moments I watched her through Carter's eyes, but as she neared the laboratory door, he turned his attention again to van Manderpootz, and she was lost to my view. And as I saw the professor close his dissertation and approach me, I slipped the attitudinizor from my head and forced myself to a measure of calm.

"Who is she?" I demanded. "I've got to meet her!"

He looked blankly at me. "Who's who?" "Lisa! Who's Lisa?"

There was not a flicker in the cool blue eyes of van Manderpootz. "I don't know any Lisa," he said indifferently.

"But you were just talking to her! Right out there!"

Van Manderpootz stared curiously at me; then little by little a shrewd suspicion seemed to dawn in his broad, intelligent features. "Hah!" he said. "Have you, by any chance, been using the attitudinizor?"

I nodded, chill apprehension gripping me.

"And is it also true that you chose to investigate the viewpoint of Carter out there?" At my nod, he stepped to the door that joined the two rooms, and closed it. When he faced me again, it was with features working into lines of amusement that suddenly found utterance in booming laughter. "Haw!" he roared. "Do you know who the beautiful Lisa is? She's Fitch!"

"Fitch? You're mad! She's glorious, and Fitch is plain and scrawny and ugly. Do you think I'm a fool?"

"You ask an embarrassing question," chuckled the professor. "Listen to me, Dixon. The woman you saw was my secretary, Miss Fitch, seen through the eyes of Carter. Don't you understand? The idiot Carter's in love with her!"

• I suppose I walked the upper levels half the night, oblivious alike of the narrow strip of stars that showed between the towering walls of twenty-first century New York, and the intermittent roar of traffic from the freight levels. Certainly this was the worst predicament of all those into which the fiendish contraptions of the great van Manderpootz had thrust me.

In love with a point of view! In love with a woman who had no existence apart from the beglamoured eyes of Carter. It wasn't Lisa Fitch I loved; indeed, I rather hated her angular ugliness. What I had fallen in love with was the way she looked to Carter, for there is nothing in the world quite as beautiful as a lover's conception of his sweetheart.

This predicament was far worse than my former ones. When I had fallen in love with a girl already dead, I could console myself with the thought of what might have been. When I had fallen in love with my own ideal—well, at least she was *mine*, even if I couldn't have her. But to fall in love with another man's conception! The only way that conception could even continue to exist was for Carter to remain in love with Lisa Fitch,

which rather effectually left me outside the picture altogether. She was absolutely unattainable to me, for Heaven knows I didn't want the real Lisa Fitch—"real" meaning, of course, the one who was real to me. I suppose in the end Carter's Lisa Fitch was as real as the skinny scarecrow my eyes saw.

She was unattainable—or was she? Suddenly an echo of a long-forgotten psychology course recurred to me. Attitudes are habits. Viewpoints are attitudes. Therefore viewpoints are habits. And—habits can be learned!

There was the solution! All I had to do was to learn, or to acquire by practice, the viewpoint of Carter. What I had to do was literally to put myself in his place, to look at things in his way, to see his viewpoint. For, once I learned to do that, I could see in Lisa Fitch the very things he saw, and the vision would become reality to me as well as to him.

So I planned carefully. I did not care to face the sarcasm of the great van Manderpootz; therefore I would work in secret. I would visit his laboratory at such times as he had classes or lectures, and I would use the attitudinizer to study the viewpoint of Carter, and to, as it were, practice that viewpoint. Thus I would have the means at hand of testing my progress, for all I had to do was glance at Miss Fitch without the attitudinizer. As soon as I began to perceive in her what Carter saw, I would know that success was imminent.

Those next two weeks were a strange interval of time. I haunted the laboratory of van Manderpootz at odd hours, having learned from the University office what periods he devoted to his courses. When one day I found the attitudinizer missing, I prevailed on Carter to show me where it was kept, and he, influenced doubtless by my friendship for the man he practically worshipped, indicated the place without question. But later I suspect that he began to doubt his wisdom in this, for I know he thought it very strange for me to sit for long periods staring at him; I caught all sorts of puzzled questions in

his mind, though as I have said, these were hard for me to decipher until I began to learn Carter's personal system of symbolism by which he thought. But at least one man was pleased—my father, who took my absences from the office and neglect of business as signs of good health and spirits, and congratulated me warmly on the improvement.

But the experiment was beginning to work. I found myself sympathizing with Carter's viewpoint, and little by little the mad world in which he lived was becoming as logical as my own. I learned to recognize colors through his eyes; I learned to understand form and shape; most fundamental of all, I learned his values, his attitudes, his tastes. And these last were a little inconvenient at times, for on the several occasions when I supplemented my daily calls with visits to van Manderpootz in the evening, I found some difficulty in separating my own respectful regard for the great man from Carter's unreasoning worship, with the result that I was on the verge of blurting out the whole thing to him several times. And perhaps it was a guilty conscience, but I kept thinking that the shrewd blue eyes of the professor rested on me with a curiously suspicious expression all evening.

The thing was approaching its culmination. Now and then, when I looked at the angular ugliness of Miss Fitch, I began to catch glimpses of the same miraculous beauty that Carter found in her—glimpses only, but harbingers of success. Each day I arrived at the laboratory with increasing eagerness, for each day brought me nearer to the achievement I sought. That is, my eagerness increased until one day I arrived to find neither Carter nor Miss Fitch present, but van Manderpootz, who should have been delivering a lecture on indeterminism, very much in evidence.

"Uh—hello," I said weakly.

"Umph!" he responded, glaring at me. "So Carter was right, I see. Dixon, the abysmal stupidity of the human race continually astounds me with new evidence of its astronomical depths, but I believe this escapade of yours plumbs the uttermost regions of imbecility."

"M-my escapade?"

"Do you think you can escape the piercing eye of van Manderpootz? As soon as Carter told me you had been here in my absence, my mind leaped nimbly to the truth. But Carter's information was not even necessary, for half an eye was enough to detect the change in your attitude on these last few evening visits. So you've been trying to adopt Carter's viewpoint, eh? No doubt with the idea of ultimately depriving him of the charming Miss Fitch!"

"W-why—"

"Listen to me, Dixon. We will disregard the ethics of the thing and look at it from a purely rational viewpoint, if a rational viewpoint is possible to anybody but van Manderpootz. Don't you realize that in order to attain Carter's attitude toward Fitch, you would have to adopt his *entire* viewpoint? Not," he added tersely, "that I think his point of view is greatly inferior to yours, but I happen to prefer the viewpoint of a donkey to that of a mouse. Your particular brand of stupidity is more agreeable to me than Carter's timid, weak, and subservient nature, and some day you will thank me for this. Was his impression of Fitch worth the sacrifice of your own personality?"

"I—I don't know."

"Well, whether it was or not, van Manderpootz has decided the matter in the wisest way. For it's too late now, Dixon. I have given them both a month's leave and sent them away—on a honeymoon. They left this morning."

THE END

THE BIPEDS OF BJHULHU

By KENNETH STERLING

With tense expectancy we watched the rapid approach of the whirling disc from Bjhulhu.* Now, at last, we would be compensated in part for our patient, incessant travail by viewing the culmination of the fruits of our labor. As the disc drew near, we recalled the uncounted seons we had toiled.

* * *

With the fulfillment of our pledge to aid in civilizing young worlds in view, we maneuvered our asteroid around into a convenient position looking down on the northern hemisphere of Bjhulhu, the third planet from the sun. Having carefully examined the various types of creatures inhabiting the blue-green world by means of our electro-telescope, we came to the conclusion that the two-footed mammal was the species most capable of being developed into a civilized race. This animal generally walked erect, on two feet, seldom using his two other limbs for any purpose save fighting and eating and occasionally for locomotion through the trees. Although the insects seemed more advanced in some aspects, it appears they had no period of mental infancy, that is, each individual came into the world with the identical instincts and mentality (if such it may be termed) of the parent, leaving no opportunity for advancement. On the other hand, in the case of the bipeds, each infant was born with his mind almost a perfect blank, and while he had to devote much time to learning such things as his parents had already learned previously, (unnecessary, of course, for an insect) he might *acquire new knowledge*, and for this reason we decided to

● This little story was awarded the Second Prize in our July, 1935 Short-Short Story Cover Contest. Written around the illustration on that number, it presents a decidedly unusual plot.

attempt to cultivate the intelligence of these beasts. After having set up our thought-wave projector aimed at Bjhulhu, we adjusted it to the thought-pulsations of the bipeds. At first they were unresponsive to our thought messages, but by the time Bjhulhu had made two hundred odd revolutions about the sun, the thought-waves we were broadcasting began to show results in the actions of the bipeds. We had been sending out the idea of using stones as weapons against their enemies, and now all over the blue-green planet the bipeds were commencing to arm themselves with stones to combat the huge carnivores which attacked and preyed upon them. However, to our great astonishment, these queer creatures often used their armaments against one another for no apparent reason. We were at a loss to explain the cause of these actions, except that perhaps they were engaging in battles amongst themselves for the purpose of practicing and increasing their skill in the use of their weapons. But that these were sham fights seemed unlikely since many bipeds were killed in them, and besides, it is doubtful if they had the intelligence to drill in contemplation of improvement. We never fully understood their motive for mutual destruction, and though we continually broadcast thought-waves urging the cessation of this wanton practice, we never accomplished this end.

With perseverance, we were able to impress upon the bipeds the possibility of communication of thoughts by producing audible vibrations. We chose to teach them

*Earth.

this method of speech rather than any other because they were sensitive to sound and could modulate and vary the sounds they made with their mouths. Before our advent, the bipeds had used their voices to express such fundamental emotions as joy, fear, anger, etc., but we had taught them by means of the thought-projector to exchange more complex thoughts and ideas. As the time passed, the inhabitants of the blue-green world began to handle the weapons and the various other implements we had taught them to use with greater ease, and soon their upper limbs were being used almost exclusively for this purpose. Before long they could converse with facility. As a result of constant use of the mind, their mental powers were increased and sharpened. Yet this anti-social spirit still seemed to prevail to the same degree it always had. Although this impeded them greatly, they were able to progress with our aid in spite of this inborn stumbling-block.

We then proceeded to telegraph to the bipeds the idea of making miniature representations of objects they observed. At first their attempts were rather crude, but later on they improved greatly. The next step was for them to express the ideas of sound combinations they uttered in pictures or symbols. This operation, like the sound communication, was not mastered in a short time but gradually developed into more organized forms of writing as the race advanced in mental capacity.

In the meantime we had not neglected the utilization of the forces of nature and the understanding of laws of mechanics. We had projected the idea of using fire and also the principle of the lever. Then followed the principle of the wheel and the other basic elements of mechanics and physics. From this point the bipeds advanced onward by leaps and bounds. Being able to make permanent records of their knowledge, it was preserved from generation to generation.

The impetus we gave the bipeds kept them coasting on their momentum, as it were. For example, when we projected the principles of the lens to them, they

developed the telescope and microscope and other optical instruments of their own accord. In these more complicated ideas, we had to narrow down the range of the thought-oscillations so that the idea would be impressed only on the minds of those very few individuals who could properly understand it, and the most receptive of these few would be the first one to expound the conception to the third planet. In some cases two or more individuals were equally receptive to the thought and so the idea was imparted to these simultaneously.

By this time the scheme of things on Bjhulhu was organized in such a way that each individual did that certain type of work for which he was best fitted. The race had by now become rather adept at all manner of craft. But still it was more primitive socially than even the protozoa, the lowest forms of life, which in many instances live in colonies in perfect coördination and coöperation. Frequent wars ravaged Bjhulhu, wars in which the bipeds fought among themselves for no apparent cause. There was no need of war any longer, for nearly all common enemies of the race had been wiped out. We were unable to check this inherent lust for mutual destruction and it often tore down what we had built up. Notwithstanding, with the help of our thought-wave projector, we still continued to develop the civilization of the biped at an accelerated pace, and they progressed onward, ever onward.

Until the bipeds had been making voyages out into space and to the moon with their space navigation discs for many decades, our presence had been unknown to them. We had always kept the asteroid enveloped in a screen of invisibility, and the only perceptible indication of our existence was the *aurora borealis* which was caused by the electrical disturbances that the thought-waves made. However, we decided that it would be quite fitting that the bipeds should learn of their unknown benefactors. Accordingly, we removed our screen of invisibility and at the same time projected thought impres-

sions to them containing the history of how we had aided and accelerated their mental development. Now, although we were able to send out thoughts by means of the projector, we had no way of knowing what was passing in the minds of the inhabitants of the third planet except by observing their actions. We saw that they were considerably excited by the sight of our asteroid, and were beginning to build an especially large space-navigation disc. Presuming that our thought message had been received, we concluded that the appreciative bipeds were preparing to pay us a visit to express their gratitude. In an amazingly short time, the construction of the disc had been completed. We had made ready to welcome our protégé with open arms.

* * *

Our reminiscences were interrupted abruptly, for now the space-disc was circling about just a few thousand feet above us. We experienced a thrill of excitement. The craft was swooping downward as if about to land.—What happened next was such an unforeseen contingency that we were completely stupefied.—The ship suddenly swerved and headed toward our thought-projector. A bolt of lightning leaped from the disc to the projector. The

vessel withdrew as quickly as it had come.

Later examination showed that the bolt had done considerable damage and caused five deaths, but it was chiefly the principle of the thing that disturbed us. The only plausible explanation we could find for these inconsistent, warlike tactics is that the bipeds' minds were not receptive to the thought message which told the true history of their race, as it was far too incredible to even register on their brains. When the bipeds saw our asteroid and the projector mounted on it, they fancied, with their ever-present hostility and suspicion, that we were preparing to invade Bjhulhu and that the thought-projector was a weapon of some sort. Without any investigation, they had rashly attacked us. We now realized that it would have been better, perhaps, to have remained in concealment, but on the other hand, the inhabitants of the third planet would have discovered us eventually anyhow.

After due deliberation, we decided to leave this inherently unfriendly race to its own resources. As punishment for their hostile attitude, let the bipeds of Bjhulhu fare for themselves, advancing slowly and gropingly, remaining at a stand-still, or degenerating into the beasts they were when we discovered them.

THE END

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1. What is matter composed of? (See Page 776)
2. What is gravity? (See Page 782)
3. How many "earths" could fit inside the sun? (See Page 783)
4. Do insects make any noise? (See Page 784)
5. Give the number of vibrations per second of violet light. (See Page 785)
6. What are the Haversian canals? (See Page 787)
7. How many senses has the normal human being? (See Page 801)
8. What is the thyroid gland? (See Page 823)
9. Give your description of the human cretin. (See Pages 823-4)
10. What is thyroxin? (See Page 825)



(Illustration by Saaty)

They came on us in a shouting, gurgling, jabbering mob.

ISLE OF THE GARGOYLES

By

WILLIAM LEMKIN, Ph.D.

● "And so, Newhall," explained Dr. Stannard with an emphatic shake of the finger as though lecturing a class, "the thyroid gland is, in a very general way, like the accelerator of an automobile—it increases or decreases the combustion of the fuel in your body, and thus frees more or less energy to be used for heat, motion or other needs."

I nodded comprehendingly.

"In short, you see," concluded the learned doctor, "this tiny organ is the supreme regulator of the human body. And now, my good friend," smiling affably, "this is my busy day, and I shall be pleased if you'll excuse me—I have lots of work to do. Perhaps I'll have time to see you again some day in the not-too-distant future, and then maybe you'll be able to absorb more information about glands and hormones to deal out to your scientifically inclined reading public. So until then"

I gathered my notes together. Dr. Stannard turned to his reagents and his chemical apparatus. I mumbled some words of appreciation and retreated from the scientific sanctum with a feeling that almost amounted to awe.

I prided myself exceedingly in the fact that Dr. Stannard regarded me as qualified to be considered a member of his limited group of acquaintances. For nearly two years now I had enjoyed this close contact with him—an association which few, except those in his immediate scientific circle, were fortunate enough to experience. Even before he had joined the staff of the Golden Gate Medical

● Any good science-fiction story must contain the three prime essentials—reality, fantasy, and science.

Reality is the most important in any story, science-fiction or otherwise. No matter how much good science or imaginative fantasy an author may put into a story, everything is valueless without the ring of truth.

As for the fantasy, the story must excite your imagination and give you food for thought. The science must be based on known facts, though it may profound its own theories—at no time becoming the least bit technical or boring.

The point we wish to impress is that Mr. Lemkin's latest effort—he has not written for several years—boasts a superb proportion of all the three essentials. Before you are very far into the story, you will believe that you are reading of a true adventure. The science supports the fantasy to such a degree that you will say to yourself, "It could be so!"

We honestly rank Mr. Lemkin's novella as one of the very top-notchers of the year, as a story, and as new policy science-fiction. There are many graphic portrayals in this tale that will live in your memory for a long time, almost word-for-word.

Centre I had heard of him as a rather well-known authority on glands. When he had finally decided to come west and accept his present post in San Francisco, I came to know and grow fond of him. My assignments as special science interviewer for Federal Press took me up and down the coast from San Diego to Vancouver and back again—but I never enjoyed better the treat of dropping in on Dr. Stannard and hearing him discuss the intricacies of ductless glands, internal secretions, and hormones. His easy command of the subject was such that, after every one of his numerous private lectures to me on the subject, I left with a feeling of profound awe for the man.

Dr. Stannard was one of the recognized authorities in his field. He had made a lifelong study of the ductless glands and their peculiar effect on the human personality. He had devoted years to researches on the pituitary and the thyroid, the adrenal glands, the gonads, thymus, and others. He had contributed much to present day knowledge of the work which these marvelous little organs do in shaping the physical make-up of every human being. His detailed investigation into the character of those mysterious chemical substances called *hormones*, which the glands of internal secretion are constantly pouring into the blood stream, had earned for him the reputation of ranking authority in the field. From far and wide he was consulted as to his opinion on this or that phase of gland chemistry. His writings—and he published voluminously—were regarded as the last word on the subject. If Dr. Stannard said it—then it must be so! . . . there was no disputing his findings or decisions.

To be sure, Dr. Stannard's phenomenal work on glands had not failed to bring him sufficient of the material rewards of life. There had been large fees for expert consultations, substantial prizes for record-breaking achievements, gifts from individuals and institutions that had benefited materially as a result of his discoveries. By reason of these incomes he was rather comfortably situated, in a material sense—you might even say that he was moderately wealthy. But, withal, he was the same modest soul as ever—and, as always, a painstaking worker, a delver into the enigmas of life and the human organism, as though money rewards were the last consideration—which indeed they were.

Again I was closeted with Dr. Stannard. He had sent for me—the call was urgent, and I had come on the run. The gland authority appeared to be worked up about something. He did not keep me guessing long.

"Being in the newspaper field," he began, "you must be acquainted with the reports that have been circulating of late re-

garding the so-called *Island of the Gargoyles*."

I repeated the odd name thoughtfully. It had a peculiarly familiar ring. Where had I heard it? . . .

"Why yes, to be sure," I replied quickly, as it suddenly came back to me. "Isn't that supposed to be an island out in the Pacific Ocean, somewhere off the coast of . . . of . . . let me see, now . . ."

"Peru," volunteered Dr. Stannard.

"Yes, of course . . . Peru," I echoed. "And they say that it has a queer race of people on it . . . some kind of freaks, or human monstrosities, I believe. Didn't some freighter or tramp steamer chance upon this island recently and bring back all kinds of fantastic tales about it and its inhuman flock of inhabitants?"

"There have been no less than three such reports in as many months," corrected the scientist, "and each one recounts substantially the same tale."

"Now that you mention the matter, it seems to me there were several such stories about an 'island of human gargoyles.' But, to tell the truth, I was inclined to laugh the whole thing off as too fantastic to warrant any serious consideration."

"And I daresay that that was the reaction of most thinking people to the weird tale," the doctor stated.

"It smacked too much of the flavor of that other maritime myth—the sea serpent. When a bunch of ordinarily well-intentioned seafaring men get themselves on the outside of a quantity of strong liquor, that's the time they are likely to see almost anything . . . But, doctor . . . what is this fairy tale to you? I don't suppose you take any stock in such tall stories?"

● Dr. Stannard was silent for a moment.

There was a far-away look in his eyes, and he toyed with one of the chemical flasks lined up in a highly polished array on his laboratory table.

"You may not immediately see the association," he said at last, "but I have a sneaking suspicion that the *Island of the Gargoyles*—to express it in the vernacular

—lies right up my alley. I've given some very careful study to all the reports which have come in to date regarding this unusual island and its unusual people. And I've come to the conclusion—if I were a betting man, I'd even be willing to place a small wager—that the whole matter is associated in some way with . . . glands."

"Glands?" I echoed with rising curiosity.

"Yes, glands," he repeated, ". . . those same little organs of internal secretion about which I have lectured to you so many times for the benefit of your Sunday Supplement readers. Let me give you a clear picture of the situation, as I see it. Some of it I have no doubt already told you. Perhaps parts of it will be new to you. You will pardon me, Newhall, if I go all the way back to the very beginning.

"The thyroid gland consists of two maroon-colored masses low in the neck, astride the windpipe. You know what goitre looks like, don't you? Well that deformity results from the enlargement of the thyroid.

"The gland is ductless. It has no definite outlet through which its secretion passes into the body. In this respect it differs from the other glands of the body, such as the liver, the pancreas, and the salivary glands, which have distinct ducts or passageways. Instead, its chemical substances or hormones are passed directly into the blood stream of the individual, there to exercise a profound effect on his well-being.

"If the thyroid gland operates in a healthy fashion, then the functional balance of the human organism is maintained at the proper level, and the individual develops and lives normally. However, a derangement of the thyroid results in a marked alteration of personality. When an excess of the gland secretion is poured into the blood and tissues there results a marked over-excitability of the nerves. The heart action speeds up, the body temperature rises. There is a tendency for the individual to become very emotional,

neurotic, high-strung. This is the picture of over-activity of the thyroid gland—the condition known as *hyperthyroidism*.

"And now we come to the other side of the story—the state of under-activity of the gland—the condition of *subthyroidism*. Here the burning candle which we call life flickers and smolders and smokes. The individual suffering from insufficient thyroid secretion is indifferent, awkward, dirty, sluggish—in short, an idiot. His skin is coarse and rough, his hair shaggy and lacking in normal lustre. His body is twisted and deformed. His temperature is below normal. He is anemic. He has little resistance to toxic infections. He falls an easy prey to the ravages of disease. This, in short, is the correct, although pathetic, picture of the *human cretin*.

"How does such a lamentable state of affairs come about? Nobody knows. I have made a life-long study of the thyroid gland, with particular reference to this deplorable condition known as *cretinism*, and I must confess that I am almost completely in the dark. It is something that strikes suddenly, unexpectedly. One can never anticipate the swift attack of this terrible scourge. It finds its way in a most insidious fashion into the best strata of society, and there does its awful work slowly, inexorably, and with disastrous results.

"Here is how the life history of a human cretin runs: There is a baby born under conditions which appear to be absolutely normal. On both sides the lineage is of unquestionably sturdy stock. The chances of proper development and growth appear to be ideal. If you were to look closely at the newborn infant you might say to yourself that the nose seems to be just a bit flatter than is the case in even the average among recent arrivals. You might observe, too, that the child appears to sleep almost constantly—yet, don't all infants sleep most of the time during the first weeks of life?

"In the course of a month or two, you begin to observe that the baby is not progressing as a normal youngster should.

Both physically and mentally its rate of development has slowed up. If you were to examine the child's mouth at this stage, you would detect a queer thickening of the dental ridges. At the same time the tongue becomes curiously bulky and prominent—so much so, in fact, that it is constantly projecting beyond the mouth, and offers a serious impediment to breathing when the baby is lying down.

"Soon there is a definite alteration in the general aspect of the unfortunate infant. The face assumes a waxy pallor—the skin becomes dry, scaly and bloated—the brow wrinkles like that of an aged man—the eyelids thicken and almost conceal a pair of lustreless, watery eyes—the squat nose becomes markedly more so, soon turning into a grotesque pug, with a pronounced depression at the bridge, and with wide, thick nostrils—the ears become large and stand away from the head—the mouth drools uncontrollably, while the tongue wobbles and sticks out at you as though in derision—the hair becomes thin and coarse, resembling flax in texture—eyebrows and eyelashes, if present at all, are scant—the nails are short, thin and brittle—the teeth develop late, and even then only very imperfectly, generally consisting of a few sharp, irregular points that decay rapidly and are often not followed at all by the usual second crop.

"And as for the general bodily development, the same abnormal condition prevails. Growth—whatever there may be of it—is irregular and disproportionate. The head is inordinately large. The neck is narrow and often bull-like in appearance, with great pads of fatty tissue encircling it above the collar bone. Frequently the back is humped, with an arch at the waistline. The abdomen bulges out like a balloon. The arms and legs are bowed and grotesquely diminutive. Hands and feet are broad and pudgy. The fingers are stiff, spade-like. Between the toes you will find solid skin, as in a duck, which spreads the digits far apart.

"When we consider the mental state of the human cretin, we observe a picture of repulsive vegetation. In the worst cases

of thyroid deficiency, even the intelligence found in the higher animals is lacking. In such extreme types, the victim will not recognize persons about him—not even his parents. In fact, he will often be unable to distinguish between human being and inanimate object. He evinces no interest in anybody or anything. If he is hungry or thirsty he announces his wants by grunts or other inarticulate sounds, or by screaming. He neither smiles, coughs, nor laughs. He merely sits like a sphinx. He breathes, but he does not react.

"This deplorable picture which I have painted for you is, to be sure, intended to represent only the most extreme case of human cretinism. There exists, of course, all grades and varieties of thyroid deficiency. One of the less pronouncedcretins may recognize parents and familiar faces. He may even show signs of affection for those near him. Possibly he may acquire mastery over a few words, after which further progress along that path stops. He may attain the stature of a three-year-old and remain there permanently, as though under the influence of a mysterious brake that had been applied to the mechanism of physical development. In higher cretin types, the victim of the gland deficiency may even be taught to utter a few connected sentences. He may volunteer spontaneous actions, in a mild way, of course, although his movements are stupid, slow, awkward and inordinately deliberate. At best, however, the human cretin is a pitiful object—a stunted, twisted ogre-like creature—an idiot mentally—a gargoyle physically."

● Throughout this entire lecture I sat there spellbound. A large part of this I had already heard before, in my various discourses with Dr. Stannard. Much of it was new. But even the familiar portions took on a different aspect as the scientist wove them into the fantastic pattern of his strange exposition. As he unfolded the story, I forgot for the moment the particular circumstance that had started him off on his dissertation. His last words brought it back to me with a jolt.

"Gargoyle . . . the *Island of the Gargoyles*," I breathed. "Now I begin to see. . . ."

"From the very start," continued Dr. Stannard earnestly, "from the very minute when I chanced to read the first report regarding the strange island in the Pacific, I felt, somehow, that here was no hallucination or drunken dream. It sounded intensely real. The men who brought in the first account of the island and its people told a graphic tale. They told of a colony of human monstrosities—stunted, twisted beings—a race of leering gargoyles that people this bit of land. The description of these beings appeared to me vaguely familiar as I read the first account. The second and third reports amplified the picture. I began to observe that the resemblance was marked. Now I feel that there can be no mistake about it. These dwarfish creatures are cretins—a race or tribe of cretins that has somehow managed to develop by itself, unknown and unmolested."

"I see it now," I volunteered in almost breathless awe at this appallingly unorthodox notion. "A tribe of human beings that are all suffering from the same condition, namely, a deficiency of thyroid activity"

"Exactly," rejoined Dr. Stannard eagerly. "The more I've studied the reports, the more I've compared and analyzed, the firmer are my convictions that we are dealing here with a general condition of *subthyroidism*."

"Darn queer, isn't it, doctor, that an entire group should become afflicted in that way."

"It is unprecedented, Newhall, but by no means beyond the realm of credibility. And what an opportunity this offers for a detailed research in cretinism! Imagine a complete society of cretins, living their life in a more or less organized state. Then just consider the flock of questions that crowd each other for solution. What combination of circumstances brought on this strange condition? What is their mode of life? How do they subsist? Have they sufficient intelligence to realize the exist-

ence of an outside world beyond the limits of their little island? These are merely a few of the literally hundreds of questions that present themselves here. And not the least important of the questions is the one concerning a cure."

"A cure for cretinism?" I queried.

"Well, I wouldn't call it exactly a cure," replied Dr. Stannard. "Let us call it a method of treatment. If a deficiency in thyroid activity results in the development of a cretin type, then what is the remedy for the abnormality? Quite obviously, it is the artificial stimulation of the gland. By such stimulation the thyroid is induced to manufacture more of its peculiar chemical secretion, which finds its way into the blood stream. The result is a reversal of the cretin characteristics and a gradual change to normalcy."

"However, such artificial stimulation of the thyroid gland is very difficult. I doubt if it has ever been done with satisfactory results. A somewhat better method is to feed the cretin with gland tissue taken from lower animals. This procedure, too, has fallen far short of producing the desired results. But there is one method of treatment which has been growing in importance in recent years. It seems to be the only effective way of attacking the condition which we call cretinism."

"The active chemical ingredient in the thyroid secretion is called *thyroxin*. It was isolated only a relatively short time ago—and its isolation and identification constitute a lasting monument to gland chemistry. Thyroxin is a white, finely crystalline* substance, with a rather high percentage of iodine. At first it was derived solely from animal thyroid tissue. Now, thanks to the marvels of chemical synthesis, it is made artificially in the laboratory. Small doses of thyroxin administered periodically to the cretin, either in his food or injected directly into his blood stream, will work marvels."

"Let us take our cretin infant when he first exhibits the loathsome earmarks of his type. A scientific schedule of thyroxin feedings or injections is begun. In a few days you will observe that his body tem-

perature rises to nearly normal. He now needs much less wrappings and bed-clothing. As his circulation improves, he becomes less livid in color. His extremities lose their coldness. Within a short time, the cretin will begin to recognize and know his parents. He will smile. He will start to exhibit the playfulness of a normal infant. Slowly the facial characteristics that accompany cretinism will disappear. His body will grow with almost phenomenal speed. The teeth will cut through and develop at an astonishing rate. The hair which has been dry, shaggy, and rough, with the texture of straw, will become silky, long, and curly. The harsh, coarse skin will become soft and moist, and of a healthy baby-pink color. The child becomes bright and active. In short, a complete transformation in body and soul is engendered. Through the medium of daily administrations of thyroxin, you can take a creature who has seemingly been designated by fate to develop into an idiotic, dwarfish, deformed monstrosity of a being, and transform him into a normal, healthy member of the human family."

"And what if the treatment should stop?" I inquired. This subject of cretinism and its cure had me intrigued—it was fascinating in its implications.

"There follows an immediate reversal to the original condition," was Dr. Stannard's prompt reply. "Two or three days after the last dose of thyroxin has been administered, a general reaction sets in. The child does not respond to ordinary stimuli. He seems to have lost his former spontaneity. He will speak only when spoken to. He will sit quietly in a chair all day, motionless and apparently in a stupor. Soon there is a change noticeable in the skin and hair. They revert to their former condition that is characteristic of the cold-blooded animal state. Gradually the complete picture of the cretin comes into full bloom."

"And now," I wanted to know, "what happens if you resume the thyroxin treatment?"

"Then the former transformation is promptly repeated," returned the sci-

tist, "and he again becomes a reformed cretin."

"I wonder, Dr. Stannard, what is the ultimate fate of these beings which you call 'reformed cretins'?"

"They turn out normal in every respect, Newhall—most emphatically so," came the prompt answer. "Those of whom we have any record grow up into healthy men and women, all vigorous specimens of humanity, and useful members of society. Not a soul outside of their immediate family has even the slightest notion that they are cretins. The most acute observer would find it difficult—in fact, *impossible* to detect even the faintest trace of abnormality. As long as the patient faithfully absorbs his daily dose of thyroxin, he is a normal individual, physically and intellectually. Some of them may even become outstanding in their chosen field. It is not at all impossible for a reformed cretin to distinguish himself as a business executive, an engineer, an architect, a college professor. In fact," with a twinkle of the eye, "he may even turn out a brilliant newspaper man."

"Or a renowned gland specialist," I parried good-humoredly.

● Dr. Stannard reached into a drawer of his desk and produced a pill box. He pushed it open to reveal its contents—rows of small, creamy-white tablets in neat array.

"These are thyroxin pills," he explained simply. "Each is a daily adult dose—sufficient to maintain normal bodily activity. Of course, the doses are graded down for younger patients—down to an almost microscopic amount for newly-borncretins."

"So this is what turns the trick!" I breathed. These tablets—so innocent in appearance—these small squares of medication were the all-powerful medium which were daily effecting the remarkable transformations that the scientist had just described.

"And to think of it, Dr. Stannard!" I ventured. "Your everyday associate, even your best friend, may be carrying around in his pocket a box of pills like this one

here. He may be a reformed cretin, depending for his state of normalcy upon a daily dose of thyroxin."

"That is precisely the case, my dear Newhall," smiled the gland expert. "And unless that particular person chooses to divulge his . . . let us say . . . *unpleasant secret*, why you may go on to your or his dying day, never suspecting in him the faintest trace of anything out of the ordinary."

Dr. Stannard carefully replaced the precious box of tablets and turned again to the original topic—once more I had lost sight of it temporarily.

"And now to take up again the matter of the *Island of the Gargoyles*," he began, "and what an apt name that is too. I've spent a considerable part of the last few weeks in gathering up all the available information about it. After a good deal of hunting, I succeeded in locating several officers and seamen of the ships that have touched the tropical island. They describe it as being a tiny bit of land located about 300 miles due west of Peru, and far enough removed from the well-traveled shipping lanes so as to have escaped detection up to now—as far as our present records reveal. The first two vessels—my informers tell me—did not make physical contact with the island. They merely stood off at a respectable distance and made their observations of the inhabitants from afar. But the observations were nevertheless complete and they coincided in every detail. These prosaic seamen, the ones that I interviewed at great length, painted as complete a picture of the human cretin as could be done by the most astute researcher in the field of glands. There was no mistaking the condition.

"But the third ship—the *Caliente*—which brought its story to San Pedro only last week, actually furnished a first-hand account of the cretin race. Some of the crew went ashore and really attempted to establish communication with the human monstrosities. They reported little success. Apparently this cretin gentry was hostile to any intrusion from the rest of the world. The seamen failed to learn anything about

their origin, their mode of life, their language, or their customs. In fact, as I understand it, the visitors were compelled to make their departure in somewhat of a hurry. But they carried away with them a vivid impression of the cretin creatures.

"And now, Newhall, just what am I driving at by all this talk? Well, perhaps you have already surmised my object. I mean to hunt out this *Island of the Gargoyles* and make a thorough study of its queer inhabitants. I have already chartered a small vessel which at this very minute is loading up with supplies down in the harbor. Furthermore, I have succeeded in persuading John Glynn, second mate of the *Caliente*, to sign up with me as master and guide. At present he is supervising the job of getting my ship ready. We plan to start in about ten days. And now here is where you enter the picture. Would you care to join me on this gland adventure?"

"Why . . . Dr. Stannard . . . I . . . that is . . ." I stammered, taken back completely by the suddenness of the invitation.

"Or, shall I put it this way: Would you be able to arrange your business and personal affairs so that you could conveniently drop out of civilization for the space of three weeks or a month?"

Would I *this* . . . or could I *that* . . . Nonsense! . . . Just let anyone or anything try to stop me from agreeing to this amazing offer! When I recovered my speech I hastened to accept before the doctor had had an opportunity to change his mind.

"And," I blurted out, "as far as arranging my affairs . . . why, that's practically arranged already. I'm scheduled to start my month's vacation just three weeks from to-morrow. It'll be a cinch for me to advance the date and make it coincide exactly with the period of the trip. Say, Dr. Stannard, I'm just aching to start!"

"Remember one thing, my dear friend Newhall," the scientist reminded me. "This is not going to be a lark, by any means. There may be some real hazard

associated with the job of investigating the island of cretins. I am already pretty certain of one fact, namely, that they are not a friendly race. They may, with all their grotesqueness of body and their feebleness of intellect, harbor a certain resentment at being molested. And so I want you to bear in mind the dangers that may be attached to this bit of thyroid gland research."

"Hang the danger!" I cried with the characteristic bravado of youth. "When do we go?"

CHAPTER II

The Search for the Isle

• "I thought I knew my Pacific Ocean," remarked Second Mate John Glynn—now Captain John Glynn, in command of the first cretin research expedition in history. "I thought I knew it like an open book, but this here *Island of the Gargoyles* is something brand new to me. Funny how nobody ever stumbled on it before. And what a terribly queer bunch of ducks on it, too. They sure need investigating, doctor."

"There's going to be plenty of investigating, Glynn," the scientist assured him. "And how are we coming along?"

The skipper consulted his charts. "We crossed the Equator early this morning," he announced. "If we continue at the same rate of speed, and if nothing out of the way should come up, we ought to be within sight of the island by day after to-morrow."

The prospect of soon reaching our goal was sufficient to send a tingle of expectation dancing up and down my spine. Dr. Stannard himself was visibly excited at the thought that we were fast approaching that enigmatic bit of land with its strange denizens. We spoke over the plans of campaign—or rather, the scientist went over his plans and I listened—perforce. It was Dr. Stannard's show, and he was running it in the manner best calculated to bring results.

From the very start, the scientist had made it clear that this was only a pre-

liminary expedition. "Just to get the lay of the land," were his words, "to get a general picture of the situation and pave the way for a systematic study and treatment of the cretin group—if they are at all willing to submit to study and treatment."

Since our purpose was not generally explanatory, the scientific equipment which Dr. Stannard had included in our load of supplies was only of a general nature. However, he had taken along a generous supply of one essential commodity—thyroxin tablets—thousands of them neatly stored away in hundreds of little pill-boxes similar to the one which I had first seen in his laboratory.

"Once I have determined the underlying causes of this generalized cretin condition," explained the scientist, "if such it really is, then the next step is to attempt a cure—or rather to institute a method of treatment. There is still much to be learned about the progress of the regimen, and the best conditions under which a reversal may be accomplished. I can see no finer field for such a research than this concentrated cretinoid condition. To be sure, this does not take into account the ethical side of the question, namely: Do these unfortunate creatures desire to be transformed? Do they *ask* to be made the subjects of a scientific experiment? That aspect of the case seems now to be beside the point—as much so as the question of whether the degraded Hottentots or the miserable Bushmen desire that missionaries come into their midst to preach and convert and uplift. Perhaps they do not care for the uplifting. Who knows?"

"Well," I argued hotly, "there may be some doubt or controversy when it comes to uplifting the spirit or saving the soul, or some such intangible benefit like that. But when it's a question of deformity or sound physical health, idiocy or normal intelligence, then I don't believe that there are any two ways of looking at it. And I can't see how it would be so terribly unethical to put this whole cretin colony through a complete restoration treatment.

Why, it's the finest thing that could possibly happen to these poor unfortunates."

"That remains to be seen," remarked Dr. Stannard with peculiar emphasis in his tone.

• The bit of land presented the typical aspect of an island in the equatorial Pacific. From the distance at which we first scrutinized it, there was nothing to distinguish it from the thousands of similar oases of soil that dotted the interminable expanse of blue ocean. Our ship drew closer. Gradually it became possible for us to make out more of its physical structure.

So this was the *Island of the Gargoyles*? Dr. Stannard, Glynn, and I stood at the rail, eagerly scanning the morsel of land. It could not be very large—perhaps five or six miles across, as seen from our present position. A heavy tropical vegetation covered the entire island down to the very water's edge.

"Life there must be easy," pondered Dr. Stannard. "An equable climate—an abundance of food—freedom from most dangers that beset human existence in other parts of the world—what an ideal spot for life in the raw."

We stood on deck and scrutinized the island closely, as our vessel slowly approached. There were no signs of living things visible among the lush vegetation, nor could we make out any indications of human habitation.

"The natives must keep themselves well out of sight," I ventured, "perhaps from force of habit."

"I don't know if it's habit or what," put in Glynn, "but they didn't exactly come out to greet the *Caliente* with a welcoming committee, either. It's when we landed that they started to do their stuff. Well, I wouldn't say they got nasty, exactly. They looked too idiotic and stupid to be capable of that. But they showed plain enough they didn't like our snooping around among them. They gave us a sort of unpleasant impression that we weren't altogether welcome. And you can bet they made us feel plenty creepy."

"Some of the men of our ship were for hanging around a little longer to see if we couldn't learn a bit more about these queer ducks—scientific-like, you see. But that idea was vetoed in short order. I couldn't see any sense in sticking around where we just weren't welcome. For my own part, I was ready to quit right away and let these poor devils live their own lives without being bothered by a mess of snooping busy-bodies like us. But of course, doctor," with an apologetic gesture, "when it comes to a real scientific expedition like this one, well that's a bit different. At least you're really out to investigate those queer people, not just look at them curious-like, the way you look at animals in a zoo. And besides, maybe you can do the poor creatures some good—maybe you can really cure them."

"We'll see about that when the time comes, Glynn," declared Dr. Stannard, his eyes glued to his binoculars.

"There's a sort of little bay or bight where we anchored last time," remarked Glynn. "It won't take long to locate it."

Presently our vessel streamed into a natural little harbor, half-circled by the glistening white sands of a virgin beach. We dropped anchor in shallow water several hundred yards from shore and made ready to land.

"Better let's take our guns, doctor," suggested Glynn. "Nothing happened the last time, but . . . you never can tell."

"Nonsense, my good fellow," was the scientist's laughing reply. "Those creatures are perfectly harmless."

Nevertheless, discretion prevailed, and the three of us were armed with our automatics as we pulled toward shore in the small boat. The other three members of the ship's tiny crew—Mills, Brennan, and the Chinese cook, Ling, stood at the rail and silently watched our departure. Presently our keel scraped bottom. Glynn hopped out and dragged the boat up on the sand. We followed.

The beach was deserted—this might just as well be Robinson Crusoe's island. We advanced a few paces from the wa-

ter's edge up the gentle slope toward the thick woods that fringed the shore.

"This is about as far as we got the other time," announced Glynn. "It's just around here that those queer birds came out—and made us understand that we weren't any too welcome. The first one we saw was" He suddenly broke off and clutched my arm—I happened to be a foot away from him just at the moment.

"Look!" he exclaimed tensely. "There's number one, now—and *two* and *three* as well!"

We observed an agitation among the thick underbrush where the beach ended and the heavy tropical forest began. A face appeared—a hideously grotesque visage, framed by the tangled mass of vegetation. Behind that one, two others were visible, equally grotesque. We three adventurers stopped in our tracks and watched in apprehensive silence.

Presently the underbrush parted and a twisted caricature of a human being made its appearance. For a moment or two the creature stood regarding us with suspicion—if it were at all possible to read suspicion on a face so devoid of normal human expression. Then he waddled several steps closer to us and stopped to study us further.

What a monstrosity of human creation, I thought. I had been somewhat prepared by Dr. Stannard's oft-repeated descriptions of cretinism at its worst. But this living abomination that faced us here was more loathsome in the flesh than any word picture could ever portray him. I had to shut my eyes and turn away momentarily in an effort to blot out the gruesome spectacle. When I looked again, there was the cretin as before, while behind him stood two more of his twisted, pot-bellied, spindly-legged clan—all with that same idiotic, expressionless stare. They were half-naked, their only excuse for a costume being some tatters of rags, leaves, and straw that served but poorly to conceal the grotesqueness of their distorted bodies. Hair and skin were coarse, rough,

unkempt, and dirty. They presented a spectacle that was positively revolting.

"Cretins!" breathed Dr. Stannard. It was as though he were hardly able to believe his own eyes—as though, through all his discussions and explanations and plannings, he had always entertained a suspicion that he might eventually find himself mistaken as to the actual existence of an island of cretins. It was as though he had been reluctant to believe such a fantastic condition—and as though at a single glance, his suspicions and conjectures were instantly confirmed.

"We couldn't make them understand a word that time," confided Glynn. "They just looked at us dumb-like . . . the way these fellows are eyeing us up. Say, you guys . . . !" he called out to the trio of gargoyle creatures. "Let's get together on this proposition, and . . . "

The foremost cretin uttered some guttural sounds. His beady eyes blinked expressionlessly. Behind him his two companions emitted some equally unintelligible syllables. They might have meant anything—suspicion, resentment, inquiry, anger, welcome—we could take our choice. Presently the first creature turned awkwardly on his heels. The others did likewise, and the trio disappeared in the tangle of vegetation.

"Maybe they want us to follow them," I suggested.

"Even if they *don't* want us to, that's just what we're going to do," asserted the scientist, as he stepped hastily forward.

"Careful!" urged Glynn.

- We plunged into the underbrush on the heels of the retreating cretins. A trail opened up before us—a well-beaten path that wound off through the semi-darkness of the tropical forest. Just ahead of us we could see the three dwarflike figures plodding along. They paid scant attention to us as we followed in their footsteps. Perhaps they had intended that we tag along after them. Perhaps their mental processes were not sufficiently acute even to realize that they were being trailed. At any rate, we proceeded cautiously.

Soon we came upon others of the colony. Here and there a familiarly grotesque face leered at us from behind a tree. Occasionally a monstrosity would slink into view, regard us with an inane stare, and shuffle back again into the enshrouding gloom of the jungle forest. Frequently we came across cretin beings, singly or in groups, seated or lying by the side of the trail. Some blinked at us fatuously. Others appeared to be in a semi-stupor. These did not possess enough initiative or desire or even ability to turn their ugly heads to follow us in our progress through the woods.

"Wonder where they're leading us," whispered Glynn. "We never got this far the last time."

"We'll soon find out," returned Dr. Stannard.

After about a half-mile of tramping, we suddenly emerged into a fairly large open space—apparently an artificial clearing in the forest. And there stood the cretin village—as impoverished and nondescript a collection of habitations as one could possibly envisage. There must have been forty or fifty of them—miserable, dilapidated hovels, each of which had been thrown together by the use of whatever odds and ends of building material nature had furnished on this island of tropical vegetation. As to any geometric design of streets or roadways, as to any accurate planning, there was none visible to the naked eye—just a haphazard collection of primitive shacks, as distorted and grotesque in architecture as were their diseased occupants.

A lackadaisical atmosphere pervaded the cretin village. There was very little movement visible. Whatever of the population was in sight presented a picture of supreme torpidity. For the most part, the creatures stood or sat or lay about, regarding the advent of three visitors from another world with indifference. We noticed among the cretin population several women carrying infants. I was particularly impressed by the appearance of these helpless mites, in view of detailed pic-

ture that Dr. Stannard had painted for me of the pitiful conditions attending infant cretinism.

The scientist observed my keen glances at these baby gargoyles. "There's where the greatest possibility for good lies," he remarked. "If ever this tribe is to be restored to normal existence, it is by tackling the problem at its foundation—the infant cretin."

Any extended conversation on this point was suddenly cut short by a remark from Glynn: "Looks like that big shack over yonder is headquarters or something."

The structure which he indicated was off to the left, up on a slight rise of ground, and somewhat separated from the rest. In front of it a small knot ofcretins was gathered. These creatures seemed to show more life than the others in the village. They moved about in their little group as though mildly agitated about something. Was it our arrival on the scene which engendered their unusual activity?

Then we noticed that one solitary creature stood a little forward of the cretin gathering. He presented a somewhat less grotesque figure than the rest—a little taller, not so horribly twisted, his features, even from where we first saw them, less gargoyle than those of his *confreres*. He stood motionless, facing us as we approached, while behind and on both sides the other cretins moved and shuffled about as though in nervous expectation.

"This must be the chief or leader of the tribe," whispered Dr. Stannard.

"Sort of *King of the Cretins*, eh?" muttered Glynn.

"Probably the creatures who first discovered our arrival at the beach hurried ahead and brought the news of our coming," declared the scientist.

"And now they're all set with the proper welcoming committee," grunted Glynn, "—chairman and all."

"Whatever happens from now on," I put in, "depends on how we can get along with this individual."

"It shouldn't be a difficult matter to get around him," asserted the doctor with confidence.

Meantime we had negotiated half the length of the village and had turned up the slight grade to the spot where the chief of the gargoyles and his grotesque retinue stood watching our approach. When we got to within a dozen feet of the group, we halted.

The individual whom we took for the leader eyed us questioningly. He appeared to be a cretin of a less pronounced degree than the rest of the colony. His corps of retainers were likewise of a milder stamp of cretinism than the general run of the population. Their distorted features were turned full upon us with an expression of quizzical wonder. Thus we stood facing each other, the cretin band on one side, and on the other we three visitors from a world of thyroid normalcy. What to do now?

Dr. Stannard opened with a few words of attempted explanation. It seemed hopeless, on the face of it, to try communication with this bizarre race in English—yet a beginning had to be made somewhere. The cretin chief shook his balloon-like head dismally. The rest of the group wagged their heads likewise with an air of "we don't know what it's all about." The scientist continued for several minutes longer with waning hope of making himself understood.

"It's no use," spoke up Glynn. "They can't understand a word of it. Try something in sign language—maybe they'll get it then."

"I'll be hanged if I can translate it into the form of signs," shrugged Dr. Stannard—"but I'll try, nevertheless."

• The scientist then proceeded to the task of putting across his message of gland and body restoration. He pointed to the cretin leader, indicating his short stature, his twisted body, his wasted appendages, his enormous head. He pointed out the same characteristics of the others in his band of followers. He then turned the attention of thecretins to himself, to

Glynn and to me. He showed by appropriate signs our larger build, our more proportionate architecture, our skin, hair, appendages—all the physical attributes that make up a normal human being.

He then took from his pocket a box of the precious thyroxin tablets. He went through the motions of swallowing one, then indicating rapidly with a decisive sweep of the hand a transformation from the dwarfish cretin structure to our own comparatively gigantic proportions. Dr. Stannard went through this demonstration several times, motioning repeatedly with an embracing swing of the arm to include not only the group standing there before him, but the entire colony as well. This transformation of which he spoke in such eloquent gestures was intended for all—for the whole cretin population.

The little knot of onlookers gazed half-stupidly at his queer antics. Not a glimmer of comprehension was evident in their lacklustre eyes. They followed his every motion of the arm and hand as though fascinated by the strange calisthenics, but as much in the dark as ever regarding their import.

After another vain attempt at penetrating the barrier, Dr. Stannard dropped his arms wearily and turned to Glynn and me. Beads of perspiration stood out on his forehead. He made a gesture of despair.

"I'm afraid it's useless," he smiled weakly. "Mere words, or even signs do not mean a blessed thing to those unfortunate creatures. I'm afraid that there is only one way to cut this Gordian knot—and that is simple, direct action."

"What do you mean by that, doctor?" I queried.

"We'll just have to demonstrate our intentions," was the scientist's grim reply. "These poor devils are in no position to use any judgment or discretion in this matter. They cannot be expected to say *yes* or *no* because they haven't sufficient intelligence to understand the significance of their own predicament, nor the import of our mission to their island."

"And what would you suggest?" I asked.

"Just this: We'll have to pick out one, or better still, several cretin individuals. They will be our subjects—our test material. These subjects will have to be persuaded to take the treatment, consisting of measured doses of thyroxin. It will take only a few days of dosage to bring about the first noticeable changes in body characteristics. In a short time there should be sufficient physical alteration to prove to the rest of them that our methods are effective."

"If the rest of them have enough intelligence to realize that there actually *is* an improvement," put in Glynn dubiously.

"But suppose we can't get any of them to act as willing subjects," I asked, "then what . . . ?"

"Force!" returned Dr. Stannard with a strange flash in his eyes. I had never before seen my customarily suave scientist friend so curiously frank. "Remember, Newhall," he added briskly, "that these human abnormalities are in no position, intellectually, to pass judgment. They are not to be *asked* . . . they are to be *taken and done with!* After it's all over, when the restoration process has been completed, then the time will come for them to realize the enormous good which I have rendered to them . . . and they'll thank me. But right now . . . I say: *Force!*"

I was taken completely by surprise at this sudden transformation of Dr. Stannard. No doubt, I pondered, he felt very deeply on the matter. This was his pet work—his life's labor—and he appeared to entertain rather rigid ideas as to the best methods of carrying out his plans.

And the cretins seemed to sense the import of his words. Somehow their sluggish mental processes were sufficiently quick to grasp the scientist's meaning as he made his vigorous declaration to Glynn and me—sufficiently alert to realize that he was plotting something in which they were very materially involved. The leader turned and uttered several low throaty

sounds to his companions. The group, which had stood more or less motionless during Dr. Stannard's demonstrations, now fell into nervous agitation again. Guttural whisperings were exchanged. They seemed to sense trouble brewing. We, in turn, sensed equally turbulent times in store for us—we saw troubles ahead for the doctor's scheme of converting the cretins—we began to realize that the job of conversion would be very much against the will of those most directly affected.

"Come," announced the scientist with determination, "we'll have to start sometime—might as well do it now."

He took a step forward and placed his hand on the shrunken arm of the nearest monstrosity. It was only a mild touch—more of a preparation for coaxing, persuasion, rather than any attempt at real force. Force would come only if gentler means failed . . .

The dwarf shook his head vigorously. An almost intelligent flash came into his lustreless eyes. His habitually leering mouth closed into a thin line of what might pass for determination. Evidently he was not prepared to volunteer for any experiment—he was well contented with his present lot. With a squirm and a jerk, he broke away from the touch of Dr. Stannard.

Meanwhile the group became really excited. A confused babble of sounds arose from the cretins. They drew closer about their comrade whom the stranger with the erect carriage and the queer calisthenics had dared to touch. They might be cretins—human monstrosities—creatures of the lowest order of intelligence—but they were not too primitive to comprehend that self-preservation was the first law of nature.

● Suddenly the cretin leader, whom we had for the moment lost sight of, stepped forward. From some mysterious source, he had produced a weapon—nothing more complex in nature than a stout chunk of a tree limb. It was almost as large as himself, but he raised it aloft and swung it threateningly.

"This means business—no question about it!" muttered Glynn. "Watch out for this bird—he may not have much brains—but he's got enough to make him dangerous."

As if by magic, the rest of the cretin band had armed themselves in the primitive fashion inaugurated by their chief, and they made a menacing spectacle indeed. By this time, their ranks had been augmented by others of their tribe who happened to be in the vicinity and sensed something out of the ordinary taking place.

The three of us fell back a few steps in the face of this formidable aggregation of cretin belligerence. It was something totally unexpected, as far as Dr. Stannard's calculations were concerned. He had anticipated sluggishness, apathy, perhaps mild reluctance—but never had he imagined that he would be met with open and concerted resistance. Of course there had been the experiences of the men from the boat—Glynn's men—on their attempt at exploration in the colony. Yet here was something else—not unorganized unwillingness, but actual mass animosity.

"I still think," persisted the doctor, "that I could persuade some of these fellows . . . I'd rather not try harsh methods until absolutely necessary." He seemed to have suffered a sudden change of heart. He was no longer insistent about forceful tactics. First the gentle methods . . . then . . .

He advanced, holding an open box of thyroxin tablets in his hand. With great deliberation he took one of the magical pills, held it between his fingers for a moment in full view of the assemblage, and then placed it into his mouth and swallowed it. With a bland smile he turned in a semicircle and indicated to the cretins that the medicine was harmless. Then he stepped toward the nearest member of the crowd—whether or not it was the same individual he had confronted before I could not determine—all the creatures looked so much alike in their grotesqueness, it was difficult distinguishing one from the other.

Suddenly there issued a gruff exclamation from the chief of the cretins, and he came toward Dr. Stannard brandishing his club. There was fire in his beady eyes. Three steps brought him within striking distance. So swift was the action of the monstrosity that the scientist had no chance to sidestep or even to raise his arm in order to ward off the threatening blow. The suddenness of the attack caught me off my guard as well. In those fleeting seconds I could do nothing in defense of the doctor—could do nothing except utter a hoarse cry of surprise and warning.

The swinging bludgeon was about to descend when there came a sharp crack like the snap of a whip. Instantly the cretin leader uttered a series of dog-like yelps. The club rattled harmlessly to the ground, while the wounded creature seized his right shoulder and danced around in pain. I wheeled swiftly to see Glynn still holding his smoking automatic.

"I had to wing him," he growled, "or else . . ."

The cretin group, thrown into momentary confusion by the attack on their chief, recovered quickly. It appeared to me that this sudden turn of events had magically endowed them with sufficient mental capacity to realize that they must act swiftly against their common enemy. They came on us in a shouting, gurgling, jabbering mob. Armed as we were, it would have been indeed a one-sided fray, had we elected to come to blows. But we needed no council of war to determine our course. We fell back several feet in the face of the advancing horde.

"There's nothing to do but run for it!" breathed Dr. Stannard. "Let's!"

And with that, we turned and fled precipitously down the gentle slope in the direction of the so-called "main street" of the cretin village. Behind us the pack of club-swinging gargoyles puffed and panted and shouted as they pursued with all the alacrity at their limited command. More cretins joined the chase as we fled through the ramshackle village. This seemed to be a grand holiday occasion—

to pursue three strangers from an unknown land who had deigned to intrude on the privacy of their subthyroid existence.

To be sure, the dwarfs were no match for us when it came to covering ground. When we got to the trail through the forest, the pursuit came to us only in the form of distant shouting. We slowed our pace in passing through the woods, being careful not to get off the beaten track, for it spelled our only chance of reaching the beach and our boat. Here and there, as before, we encountered straggling cretins on the pathway. Our great hurry brought from some of them only a look of mild surprise. The rest paid no attention to us whatsoever. Our progress through the woods was necessarily slower than through the open village. Behind us the sounds of pursuit came louder to our ears. We quickened our pace.

Stumbling, slipping, sliding, we finally came to the welcome break in the trees and burst out upon the white beach. Off in the distance our ship rode contentedly at anchor, while on the sands just ahead was the small boat drawn up half out of the water, exactly as we had left it.

But we observed something more. A half dozen or so gargoyle figures were on the beach in the vicinity of the boat. In fact one or two were actually in the boat. They looked up at us in mild astonishment as we dashed out toward them from the shadow of the woods. It took but an instant to grasp the meaning of this sudden visitation. These were some straggling villagers—mostly women with their young ones—who had chanced across our boat and with juvenile curiosity were trying to fathom its mysteries.

With our sudden approach, the cretins fled hastily in all directions like so many mice frightened away from a choice morsel at which they had been nibbling. With squeals and grunts, the half-dozen creatures scattered to safe distances, while the doctor, Glynn, and I scrambled for the boat. After some difficulty, we succeeded in shoving it off the sand. At that in-

stant, the first of the pursuing cretins emerged from the woods. More of them came pouring out as Glynn constantly widened the expanse of intervening water by dint of some lusty rowing. Presently the beach was swarming with grotesque creatures waddling awkwardly back and forth, shouting, gesticulating, creating a picture of general excitement and commotion. A few even dashed into the water waist-deep and stood there waving their primitive weapons with a vigor that seemed inordinately at variance with their wonted physical sluggishness. Amidst the general hubbub and excitement, the handful of cretins whom we had surprised at the boat were soon lost in the confusion.

We had covered about half the distance to the ship when Dr. Stannard called our attention to one corner of the beach where the forest ran almost to the water's edge. A different sort of commotion was taking place there. Presently, as if by magic, there appeared a kind of primitive canoe. The cretins were dragging it from the shadowy recesses of the woods down toward the water. It was an awkwardly constructed affair, and apparently the matter of launching the crude craft, once they had gotten it across the stretch of sand, presented a particular problem. From our distance I could make out much struggling and splashing, while a confused medley of shouts was wafted across the water to us. But we did not wait to determine what success, if any, the cretins had with their maritime endeavors. By now we were nearly alongside the ship. I could make out Mills and Brennan at the rail, standing ready to throw us a line.

Suddenly Dr. Stannard, seated in the bow, uttered a muffled exclamation of astonishment. He half-rose from his position so suddenly as to almost capsize our little cockleshell of a craft.

"What in thunder is this?" he exclaimed.

I looked. Glynn twisted half around, dripping oars poised in mid-air, and

looked. Under the doctor's seat was a small bundle. And as the three of us gazed in open-eyed, open-mouthed astonishment, the bundle moved—it squirmed—and then of a sudden there emerged a wailing, whimpering, plaintive sound.

Dr. Stannard reached down and brought forth the object. He undid the primitive straw matting of coarse texture that constituted the outer wrapping—and my eyes nearly popped out of their sockets when I saw what was revealed within

A cretin infant!

There was that balloon-like head—the squat nose—the watery eyes—the drooling mouth—the coarse hair—the waxy pallor—that entire aspect of grotesqueness, repulsiveness resulting from the condition of subthyroidism. The infant squirmed feebly and let forth another pitiful wail.

It was several minutes before we had recovered from our astonishment, and then the true explanation of this sudden turn of events dawned upon the three of us almost simultaneously.

"Those native women!" murmured the scientist. "One of them must have left this—this thing when we frightened them away from the boat."

"And now," I questioned in a startled tone, "what are we going to do with it?"

"Chuck it overboard," suggested Glynn gruffly.

"Not on your life!" retorted Dr. Stannard, and he replaced the tattered trappings with great care.

"You aren't thinking of returning the baby," I asked in amazement, and directed another glance at the beach, now fairly overrun with cretin creatures. From the distant shore the confused hubbub of an aroused populace reached us. The clamor that floated across the stretch of water seemed to convey to my ears a note of extreme hostility—of dire vengeance against the strangers who had dared to invade their sacred privacy—who had done bodily injury to their chief—who were even now fleeing with a helpless infant of their race.

I say that such was my impression as we skimmed noiselessly over the water. Of course, I was giving the cretins credit for more native intelligence than they deserved. Surely, in their pitiful state of intellectual torpidity, they were incapable of feelings, emotions, consecutive and logical thinking and reasoning. At least, such was the only conclusion one could reach after being made acquainted, as I had been, with the actual physical and mental characteristics of subthyroidism. Yet, despite Dr. Stannard's detailed exposition of the cretin state, despite my own personal observations made there on the island, I could not help but harbor a sneaking suspicion that I had witnessed an instance where these miserable creatures had, at least momentarily, raised themselves to an appreciable degree above their customary low level of intelligence. But back to the infant

The doctor did not reply to my question. Tenderly he folded the coarse matting about the wretched morsel of deformed humanity. Carefully he set the creature in his lap, with one arm half encircling it, as though to protect it from the dangers which beset its tragic existence in a mortal world. I looked with astonishment, scarcely able to comprehend the enigmatic tenderness of this normally cold and scientific individual.

In a few minutes we were alongside the ship. Mills threw us a line and I made it fast. Glynn was the first to scramble up on deck. With consummate gentleness, he reached for the souvenir parcel from the *Island of the Gargoyles* as Dr. Stannard carefully passed it up. Presently we were all on board, with the scientist again in possession of the squirming, whimpering cretin baby.

"And what now, doctor?" inquired Glynn respectfully.

"Put out to sea quick!" he snapped breathlessly.

Up came the anchor, and the vessel sped swiftly toward the open ocean, with the trailing dory bobbing ludicrously behind us like a cork at the end of a string.

CHAPTER III

Return to the Isle

• "Well, Newhall," remarked Dr. Stannard earnestly, "for the present, at least, our mission at the *Island of the Gargoyles* is over."

We were alone in the cabin—alone, except for the tiny mite of a cretin lying bundled up in blankets in one of the bunks. The rest of the party were somewhere in the other parts of the vessel busying themselves with their respective tasks. For nearly twenty-four hours we had been traveling steadily northward, and there were now many miles of blue Pacific between us and the island abode of that bizarre colony.

A sudden faint squealing from the parcel of thyroid abnormality sent the scientist hurriedly to the bunk. With the tenderness of a mother and the skill of a trained nurse, he ministered to its particular needs, then was back again at the table in the center of the cabin. I marveled at the evident attachment which he displayed for the unfortunate creature—an attachment that had grown enormously even in the short space of time since it had so unceremoniously been dumped right into our laps, in a manner of speaking.

"I'm sorry, Dr. Stannard," I said, "that your original plans did not come through as you had anticipated—I mean the plans for remaining on the island and trying to work out your scheme of treatment for the natives."

"There's nothing to be sorry about," returned the scientist quickly. "I was a fool for hoping that thecretins would permit me to experiment with them. But it's fortunate that things turned out as they did. Yes, fortunate, Newhall . . . extremely fortunate. And do you want to know why? Because, under the present circumstances, I'm now in a better position to see the successful fulfillment of my original ideas . . . ultimately."

"And how do you figure that out, doctor?" I asked.

"My plans are now intimately tied up with the life and the future of our new addition," replied the scientist simply, and he cast a glance in the direction of the infant. "Since fortune was so kind as to place him right in my hands just at the appropriate moment, I shall take full advantage of the opportunity which I see here presented to me. To tell you the truth, Newhall, I had not anticipated that the cretin people would put up so much resistance to my course of treatment. And I see now that forceful tactics or even simple persuasion do not constitute the best method of attacking the problem.

"Consequently I have devised an entirely new course of action. The cretin infant is coming back with me to San Francisco, will remain with me, will be under my personal care and attention. I shall put him under careful thyroxin treatment—in fact, I began the process last night with the first administration of part of a tablet. He will respond to the dosage in a very short time—of that I am positive, for his is a type of simple cretinism with which I have become extremely familiar. If all goes well, he will develop into a normal healthy youngster."

"And then, doctor?" I asked eagerly. "Then I shall try again—by which I mean another trip to the *Island of the Gargoyles*, taking back with me the reformed cretin child. And then perhaps this direct personal appeal will succeed in accomplishing what harsh force or merely impersonal coaxing could not attain for us. Maybe the sight of one of their own kind, transformed to a state of what we term normalcy, will serve to 'turn the trick,' as one would say in the vernacular. At least, I could do no more than try. If I fail, there will still be the satisfaction that I have made every human effort to accomplish the task. And if I succeed . . . well, a small portion of the vast burden of human misery and suffering will have been removed and a contribution been made to scientific knowledge which, I modestly contend, will go far to elevating the race as a whole."

Again there came over me that surge of awe—that inspired feeling of reverence which I had already experienced several times in the presence of this superman. Then a sudden faint sound from the bunk brought him hastily to the side of the cretin baby—and the superman became a nursemaid for a few moments, making the loathsome bit of distorted humanity as comfortable as the limited facilities at hand would permit.

For the remainder of my vacation period—the period which I had expected to spend among the cretins, helping Dr. Stannard to reform them, glandularly—I stayed in San Francisco. I was with the scientist almost constantly and observed with keen interest the course of treatment which he followed for the infant visitor from the *Island of the Gargoyles*. "Bobby" was the name which the doctor bestowed on the cretin tot—and "Bobby" it remained.

The child was quick to respond to the thyroxin treatment. Even in the short period during which I was privileged to observe the process at first hand I could see, even though it was with layman eyes and layman understanding, that the monstrosity was definitely headed for ultimate and complete physical and mental recovery. To put it but mildly, it was fascinating to perceive the gradual unfolding of the recovery picture as Dr. Stannard had so dramatically outlined it to me on that memorable day in his laboratory. It was like the blossoming forth of a beautiful flower—like a burst of glorious sunlight through a canopy of angry storm-clouds. It was nothing short of a revelation.

I was keenly disappointed, one day, to receive an official and peremptory summons. With my leave terminated, I was to go east immediately, there to take up a new line of investigation for my press service. However much I wanted to be here with Dr. Stannard and Bobby to observe in wonder as the cretin youngster came around under the magical influence of the thyroxin—whatever my personal desires in the matter might have been—I

was compelled to accede to the demands of duty. It was almost tearfully that I bade good-bye to the scientist and his helpless ward. Then I suddenly realized how genuinely attached I had become to Bobby, the grotesquely distorted little parcel of thyroid deficiency which fate had so dramatically presented to the doctor.

The gland expert promised to keep me informed from time to time on the progress of Bobby's reclamation. He was extremely enthusiastic about the youngster's chances of complete recovery. And he was equally confident that the child would ultimately prove to be the entering wedge that would enable him to bring to normalcy the entire cretin population of that equatorial island off the coast of Peru.

"Of course, Newhall," asserted the scientist, "I shall hide my time—there is hardly any use in hurrying matters. I intend to give Bobby an opportunity to develop into perfect childhood. Two or three years are not too long a period. When I bring the lad back it will be as a physically and mentally healthy specimen. Even with their primitive intelligence, the cretin islanders will be able to recognize that I have effected a change in their own flesh and blood. I expect this to be a most powerful demonstration—one that ought definitely to break down any opposition that they might have to my efforts at reforming them. And when I return to the *Island of the Gargoyles* I shall take with me a complete equipment for gland restoration—as complete as would be at my disposal should I transplant the entire cretin colony right here to the Golden Gate Medical Centre."

"Am I too presumptuous, Dr. Stannard," I inquired, "to consider myself part of that expedition to the island—when it really comes about?"

"Not at all, my young friend," chuckled the scientist, and he slapped my back with affection. "I'm counting on you to come along—and I know that it's going to be an experience, for me as well as for you, which both of us are not likely to forget."

And with these words of prophecy—

words that rang with resounding depth of meaning—words that momentarily parted the veil of mystery enshrounding the future and revealed for a flashing instant the picture of terror and tragedy that was to come—with these words we parted, and I hastened to catch my train for New York.

• In the ensuing months, I heard regularly from Dr. Stannard. Bobby was coming along in great shape. Now he was sprouting his first teeth—now he was cooing his first intelligent syllables—now he was sitting up—now standing unsteadily on a pair of chubby baby feet. And the gland expert did not rely on mere words to convey his enthusiasm. He frequently enclosed snapshots that illustrated far more effectively than pages of writing could the phenomenal transformation which had been effected in the child. The thyroxin was working miracles.

"You must remember," wrote the scientist, "that all depends on systematic thyroxin administration. Bobby gets his daily ration and is responding beautifully. He will continue to do so as long as he obtains that daily dosage. Should the treatment cease, even for a short period of time, then"

I knew without reading any further what the dire consequences would be in the life and personality of Bobby—and I shuddered at the thought. Truly, the erstwhile cretin infant had carved himself a permanent niche as well in my own heart as in the heart of the good man who had rescued him from repulsive deformity.

I had hoped that my work would keep me in the east no more than six months, but here again I was fated to suffer disappointments. With the termination of my duties in New York I received another summary assignment. This time I had to proceed to London, there to follow up the silly details of some inane murder trial that—so I was told—might have several international repercussions.

But even at that added distance I kept in constant communication with Dr. Stan-

nard at the Golden Gate Medical Centre. And, like a motion picture drama unfolding itself on the screen, the story of the cretin Bobby and his miraculous transformation unfolded itself through the medium of the scientist's stream of letters and photographs. With six thousand miles of land and ocean between us. I could almost see myself an actual eye-witness of the remarkable alteration.

More days and months of activity, and the date of my return to America now seemed more uncertain than ever. With the termination of the insipid murder trial there came other pressing matters that required covering. My superiors kept me hopping all over western Europe with scarcely a moment in which to catch my breath. In this manner a year skipped by. During this period Dr. Stannard's regular reports on Bobby's progress were as cheery and optimistic as ever.

"You'll never recognize him, Newhall," he wrote, and his boundless enthusiasm fairly leaped at you from the page of the letter. "Bobby's a perfect specimen of healthy babyhood. Sees everything, understands everything—quick, eager, intelligent, *alive*—toddles about—talks about everything (after a fashion)—as keen and bright as a brand new dime. You're in for a real surprise—a pleasant surprise—when you lay eyes on him again."

Well, it was just under two years after my sudden departure that I finally got around to San Francisco again. And when I burst into Dr. Stannard's quarters in the Medical Centre and observed for myself the veritable miracle which he had there performed, I could scarcely believe what I saw. Could this robust, pink-cheeked, blue-eyed vivacious runabout be that same sickly, wailing monstrosity which the native cretin woman had parked under the boat seat there on that Pacific island? It was incredible. . . .

"I'm glad you're back," exclaimed the scientist, "because I have already begun to make plans for returning to the cretin colony. I'm expecting to start in a couple of weeks—and I know that you're anxious to come along—am I right, Newhall?"

"Never more right in your life!" I exclaimed. "And just let anybody try to stop me! If Federal Press can't relieve me for a month or so, then I say, to blazes with Federal Press!"

Dr. Stannard laughed softly at my vociferous enthusiasm. "I don't think it will really come to anything quite as serious as that. At any rate, see if you can arrange for your leave of absence beginning on the twentieth—that's a little over two weeks from now. Glynn is going to be with us again to show the way. Our ship is a little larger than the one we had two years ago. But I've succeeded in getting hold of the same crew. There's Steve Mills and there's Brennan—and even Ling, the cook. Why, it will really be like continuing the same old adventure—just starting again at the point where we left off before."

The doctor went into details regarding the events of the last two years, and his plans for the forthcoming trip. They were elaborate plans—he was looking ahead into the future—he was living in advance the entire recreation of the cretin colony. His enthusiasm was of an infectious brand. I caught the virus and fell victim to the disease with alarming rapidity.

Throughout our discussion, Bobby was in and out of the doctor's office with scarcely any restraint. His nurse, a slim, attractive little maid of obviously Scotch antecedents, attempted to admonish him. But the scientist waved her aside good-naturedly and permitted the little fellow to climb all over him with the utmost abandon. It was "Daddy this" and "Daddy that" with a constant prattle of childish questions and observations. I noted a peculiar gleam in the doctor's eye at the frequent repetitions of the word "Daddy"—as though this bachelor scientist was now experiencing a thrill which he had never hoped could one day be his.

And with that I could not help but look back in my mind's eye at that enigmatic island amidst an ocean of blue water where lived the real daddy and the mother of this boy—probably a couple of

semi-idiotic, twisted runt-like creatures who had by this time forgotten entirely that they had ever possessed a wretched bit of deformed humanity called an offspring.

And yet, perhaps those cretin parents remembered—remembered more vividly than their slowpaced intelligence could retain other impressions. After all, Dr. Stannard based his hopes of success on that very premise—that the natives would remember and be capable of noting the phenomenal transformation which had been effected in that infant. And perhaps they remembered even too well—perhaps we would encounter a new and more ferocious animosity. It all remained to be seen. . . .

Once again we were off on the wings of adventure—a type of adventure that had no parallel in the records of science. We were off to reclaim an entire people from the slough of mental and physical degeneration. Did I say *we*? It was Dr. Stannard, alone, who was going to attempt the miracle, and the rest of us were mere stage "props" in the drama of thyroid revival.

And the doctor was going prepared. He showed me the vast supply of thyroxin tablets stored in his cabin—thousands of little boxes, each with its precious contents of magical pills. But there was even more than the mere cargo of the thyroid drug. He took me into the adjoining cabin and showed me something that made me open my eyes wide with astonishment. A floating chemical laboratory! There it was—workbench—rows and rows of reagent bottles, flasks and retorts—chemical and electrical apparatus of surpassing intricacy. This was surely as well-equipped a laboratory as he had worked in—almost *lived* in—for years at the Golden Gate Medical Centre. In many respects, at least to a layman's eyes, it looked even more elaborate—more complete than the one he had just left in San Francisco.

"I mean to take no chances, Newhall," remarked Dr. Stannard by way of explanation. "We're going to be on this job for several months. I shall need an exceed-

ingly large quantity of thyroxin—more than I could conveniently carry on this trip. So that I have brought along, as you see here, the means of insuring a steady supply of this essential commodity. In short, I mean to synthesize the drug in abundant quantities. Of the raw materials that enter into the synthesis, I have taken along an adequate amount. Many of these raw materials are obtainable anywhere, merely for the picking up. If it should become necessary to replenish the supply of initial ingredients, I am confident that I shall obtain them without much difficulty right there on the island. Do you remember, Newhall, what the most important element in thyroxin is? . . . the one fundamental material upon which is based its entire chemical structure?"

I confessed, with shame-faced regrets, that I did not.

"The most essential ingredient is *iodine*—and the readiest source of this element is ordinary *sea water*. If my supply should become exhausted, why, I have the entire Pacific Ocean to draw from to furnish me the basic element of the thyroxin synthesis."

CHAPTER IV

The Last Tablets

• Bobby was the life of the ship. His utter freshness, his childish sprightliness endeared him to all on board, down even to old Ling, the cook, with whom he soon developed a particular "drag." Dr. Stannard had not deemed it necessary to take along the lad's nursemaid. He had anticipated no difficulty in being capable of taking the required care of him—what with all the assistance rendered by the other members of the expedition. Each of us, down to lowly Ling, felt that he was morally responsible for the child's welfare. Each of us helped by keeping a watchful eye on him to see that he came to no harm.

I was extremely interested in Dr. Stannard's course of treatment for Bobby—for, despite the lad's apparently normal aspect and behavior, I could not—dared

not—lose sight of the fact that he was a cretin—even though a reformed cretin.

"Remember this," explained the scientist with absorbing earnestness. "In the child's veins there still flows that insidious venom of thyroid abnormality. Each day he receives his measured dosage of thyroxin, mixed in with his food. It is this daily ration of drug which, as you know, keeps him on the normal path of thyroid sufficiency. If, for any reason, the regular treatment is interrupted, even for a few days . . . well, you can picture the result . . ."

I glanced at Bobby. He was having some sort of game with Brennan, and they were both rolling about merrily on the deck a short distance from where the scientist and I stood. The merry, wholesome cackle of childish laughter came to my ears. For a moment there flashed across the screen of my consciousness a vision of his kin on the *Island of the Gargoyles*—twisted, grotesque travesties of human physique and human intellect—and, as I pictured this awful contrast, an involuntary shudder came over me, and I closed my eyes in an attempt to blot out the distressing picture.

• The equatorial sun was setting in a burst of vivid glory. Far ahead, just visible above the horizon, we could make out a small dark smudge that denoted land. Dr. Stannard, Glynn, and I stood at the rail just exactly as on that other memorable occasion two years before. And now once again we were anxiously peering into the distance, trying to ascertain the nature of the tiny island which we were fast approaching. Only this time our little observation party possessed an additional member. Bobby was with us, tugging at the doctor's trouser legs. I could almost swear that the youngster was contributing his own anxious glances in the direction of the island, to mingle with our own. Could this be a manifestation of some invisible, inexplicable link that tied up the lad with the island of his birth? Was it possible that the reformed cretin child sensed a subconscious attraction to

the spot from which he had been carried away into a new life some two years before?

"Well, here we are again," announced Glynn. He had made his final observational check-up. This was the *Island of the Gargoyles*—no mistaking it.

It was dark by the time we had maneuvered the ship about and located the small harbor which had been our debarkation spot on that other occasion.

"There wouldn't be any point in trying to land now," asserted Glynn.

"Quite right," agreed Dr. Stannard. "We can very well wait until morning. Come, Bobby," turning to the tot who was hanging in apprehensive silence to his leg, "time to go to bed. Tomorrow is going to be a busy day for you—and for all of us."

Considerable juvenile protest ensued—the kind that usually develops when the subject of bedtime is suggested to a healthy youngster just old enough to realize that many activities go on in the adult world after he retires—activities in which he would like to take part. Perhaps Bobby sensed that, tonight, a good deal of the grown-up activity and discussion would revolve about himself, his future, and the future of his kinsmen on that island just ahead.

With vociferous objections, he allowed himself to be conducted below, while Glynn directed the ship's course into the mouth of the harbor. He dared not approach too close, for the night was moonless, and he had no way of telling if there existed submerged rocks, hidden shoals or other conditions that might spell trouble for the vessel. We dropped anchor about half a mile from the shore.

The light from the stars was just sufficient to reveal the dim, ghostly extent of white which denoted the beach. And beyond this stretched the dark blur that was the forest. Off in that inky blackness there nestled the cretin village with its repulsive inhabitants. Did any of them realize at this very moment that they were soon to receive visitors—the same visitors that

had molested their peace once before? Idle conjecture . . .

Down in Dr. Stannard's cabin once more, the three of us fell to discussing plans for tomorrow. From one of the bunks came the peaceful, measured breathing of a healthy youngster, wrapped in the sound slumber that follows a full and active day. Outside could be heard the faint lapping of the water against the sides of the ship as she rode at anchor.

"We'll go ashore after breakfast," announced the scientist, "and Bobby is coming along right from the start."

"Do you think it will be safe," I asked apprehensively, "that is, I mean, safe for Bobby. They may try to get ugly at the very beginning of things, before they get a chance to realize what we've come for."

"That's just the reason," returned the doctor, "why I'm planning to throw out my trump card at the very start. The whole success of the scheme lies in our demonstrating sincerity from the first moment. The sight of Bobby should be sufficient, even to their primitive level of intelligence, to make them realize, perhaps very dimly, the nature of our mission. I am hoping that some of the less radically cretinized individuals of the colony will readily recognize the lad as the infant that they left with us two years ago."

"Left with us" is putting it rather mildly," I ventured with a grim smile.

"Well, call it what you will," replied Dr. Stannard. "You may even go the very limit and term it *kidnapping*. It was for a good cause. In my opinion, the end always justifies the means."

"A great cause," I echoed earnestly, "and one that is bound to turn out successfully . . ."

"If only they'll give me a chance to try out my treatment on them," the scientist finished for me.

"There's no telling," put in Glynn seriously, "what kind of reception they'll have for us tomorrow."

"That all remains to be seen when tomorrow arrives," assured Dr. Stannard. "We may find that reception committee which you mentioned once before waiting

to receive us on the beach. Or else, we may have to penetrate right into the village to present ourselves and our plan."

"For all we know," mused Glynn with mysterious foreboding in his tone, "they may have already discovered our presence. At this very moment they may be cooking up something in the way of a welcome."

"Anything is possible, of course," asserted the doctor, "but I honestly question the probability that such is the case. We're a good distance from shore, the night is dark, and we have done nothing to reveal our presence, so that there seems to be not a thing that we ought to be afraid of. At any rate, there would be no particular advantage if we made an attempt to go ashore tonight. So let's forget about the 'ifs' and 'buts' and 'maybes.' Let's get a clear idea of how we are going to manage this thing tomorrow."

For several hours longer the three of us sat around the table talking earnestly about the plan of campaign. Dr. Stannard outlined his scheme of attack—a peaceful attack now—of that he was supremely confident. There would be no need for force when the more intelligent of the cretins realized the miraculous transformation of their own flesh and blood. He spoke with enthusiasm of his plan to take the entire colony under his wing, figuratively. He spoke of his enormous supply of thyroxin tablets, waiting to perform a magical reversal in the island inhabitants. He mentioned his elaborate equipment for the chemical synthesis of the powerful drug, so as to insure an adequate supply for the important purpose to which he had dedicated his life. And he ended with words of hope, of confident belief in the ultimate and permanent regeneration of the entire cretin colony.

• Finally the scientist glanced at his watch. The hour was close to midnight, and he blandly offered the suggestion that it was high time we turned in.

At this instant there came sounds of a commotion from the deck. Pattering footsteps could be heard directly over our heads, mingled with cries of surprise and

pain. In a flash the three of us were on our feet. The noise of scuffling increased in intensity. There came several heavy thuds—more confused shouting—then a splash.

"The cretins!" cried Dr. Stannard, his face ghastly white. "They've discovered our presence—they're on board! . . ."

With one mighty lunge, Glynn was at the door leading to the companionway. There was a heavy thumping on the steps outside, and the shouting grew louder. Before he could place his hand on the knob, there came a violent crash at the door and it was flung open. A cretin monstrosity leaped into the cabin, brandishing a huge club. His normally repulsive face was now rendered more hideous by a leering grin. Behind him came tumbling others of his tribe, all similarly armed, all of them the very last word in horrifying loathsome-ness.

So suddenly did this onslaught come that we three were rendered motionless and helpless. But only for a moment. With a cry Glynn leaped for the compartment at the side of the cabin where our automatics lay. He had taken barely one step when the first of the cretin invaders sprang forward with terrifying agility. His weapon swung viciously. Glynn had no opportunity to dodge the blow or to ward it off. The bludgeon caught him with a sickening crash across the ear and he tumbled to the floor without as much as a gurgle.

In a flash Dr. Stannard and I were galvanized into action. There was no time to try to reach our weapons. There was no time to offer resistance. There was only one chance for us—flight.

"Quick!" screamed the scientist. "The other companionway!"

He dashed to the bunk, seized the sleeping child, blanket and all, and ran to the door at the far side of the cabin. I was close at his heels. The cretins stood hesitating for a moment—and that moment of hesitation spelled our salvation. We were through the door and out into the passageway in a flash. I flung the door back violently as we came through, and it slammed

shut with a resounding click of the latch. On the other side I could hear bedlam breaking loose — shouting, smashing of furniture, the crash of clubs against the door. But the panels were stout—they held against the onslaught.

"Here, up this way!" panted Dr. Stannard. He stumbled in the darkness and I seized him and supported him the best I could. Up the steps we hastened and cautiously emerged up on the aft deck. We crouched low. In the dim starlight I could make out shadowy forms moving about up forward. Hoarse, guttural shouting came to our ears. Again there was a splash—and then another.

"They've discovered us — somehow," breathed Dr. Stannard, "and they're in deadly earnest."

"We certainly can't tackle them with our bare hands," I whispered, "and we're outnumbered five to one—or more."

"Our only chance is to get away from the ship," muttered the doctor, "—that is, if we're not surrounded."

Still crouching as low as we could, the scientist and I hastened to the rear. He was panting violently from the exertion and excitement.

"Here, doctor . . . let me carry him," I suggested as he stumbled and nearly dropped his precious cargo. I seized the now half-aroused child, bundled him snugly in the blanket, and followed my companion to where the small boat was fastened on deck. Just before we reached it, I stumbled on something in my path. Dr. Stannard seized my arm hastily and prevented a catastrophe. We turned to look at the obstacle. It was the crumpled body of our cook, Ling. Even in the eerie darkness I could see that his skull had been bashed in by the blows of a heavy weapon.

"Those devils have been back here too!" I panted. It was evident that the cretins had moved their attack forward. There was no sign of them in our part of the vessel. I laid Bobby down on the deck. He was beginning to whimper and I hushed him up as best I could. Then I turned to help Dr. Stannard at the fastenings of the

boat. Our feverish manipulations seemed to consume hours, although the actual time could well have been merely seconds. The crashings and stampings and general confusion still came from the forward part of the vessel and from below deck.

At last the boat was loose and launched. The scientist tumbled over the side first, and I handed him the squirming, sleepily-querulous child. I followed immediately, and shoved off into the night.

"There's the cretin canoe," whispered the doctor, pointing, "two of them, in fact."

I could make out two dark masses riding the waves close to the vessel's bow. I bent to the oars and pulled steadily away, and my strokes were as noiseless as I could make them in my earnest desire to put distance between us and the ship.

We had scarcely covered fifty yards when I was suddenly halted by a new and altogether terrifying series of sounds coming to us across the intervening stretch of water. Mingled with the general tumult and uproar there came the unmistakable crashing of glass. Dr. Stannard listened attentively, and then a sudden gasp escaped him.

"They've reached my laboratory!" he cried huskily. "They're smashing my apparatus!" He moaned in genuine anguish, as though his very body were being cut by a knife. "Those fools!" he muttered with bitter grief in his voice. "The poor, benighted fools!"

Then suddenly a hoarse cry burst from his lips, and he half rose from his seat. The frail boat was nearly capsized by his sudden motion. He pointed at the vessel with a trembling finger. A lurid tongue of flame leaped upward from amidships. Another followed in its wake, and leaped even higher. Smoke began belching forth from several of the portholes. Through and behind the smoke pouring in billows from them came the orange flash of fire. Almost before I could comprehend the full import of the awful calamity, the ship was a mass of seething, dancing flames. Here and there through the smoke and fire on deck I could make out moving

forms. Shouts of anger, pain, frustration mingled with the crackle and roar of the conflagration. One after another the dark forms tumbled over the side of the vessel. Some landed in the waiting canoes. Others were not so fortunate. There were splashes and hoarse cries. The canoes hastily moved away from the doomed ship, heading in the direction of the shore, and hence away from the spot where we survivors of the catastrophe sat in our boat watching the lurid spectacle.

"They . . . must have . . . smashed my reagent bottles," stammered the dazed scientist, ". . . and . . . started the fire . . . by accident."

"Or else deliberately set the blaze just as a matter of revenge," I offered. "Poor Glynn . . . poor Ling . . . and Brennan . . . and Mills. Guess they never had a chance . . ."

But Dr. Stannard seemed to have lost sight completely of the rest of our crew and their unfortunate end. In the space of a few seconds he seemed to have undergone a complete transformation. Sitting there with Bobby in his arms he mumbled incoherently of thyroxin, glands, cretinism, and chemical synthesis. In the reddish glare of the dancing flames I could see a wild stare in his eyes. His usually strong face was haggard, ashen, terrifying. Tightly he clutched the sleeping Bobby in his arms and he leaned forward to watch with fascination as the flames consumed his ship.

Then suddenly the spell broke and he became animated. "Come, Newhall," he cried hoarsely. "Let's get away from here . . . as fast as we can!"

But where were we to go? We dared not venture to approach the beach. The returning cretins were probably there now, gloating with their fellow creatures over the summary destruction of the invading vessel and its personnel. The best plan would be to get around to the other side of the island, out of sight of the creatures that would naturally be attracted to the spectacle of the burning ship. Hidden by darkness we could be sure of safety for the time being, at least, until we were

able to gather our badly muddled wits and plan some definite course of action.

• And so I sent the boat speedily through the inky water away from the blazing hulk and parallel to the beach. Presently we found ourselves out of the little harbor where we had anchored so confidently only a few hours before. The dim stretch of sandy beach and the burning vessel were now out of sight around the projecting corner of the cretin island.

To try to make a landing now, on a strange shore, and in the blackness of the tropical night, would be a foolhardy venture. Since the sea was calm and the night air fairly comfortable, we decided to spend the remaining hours before dawn in the boat. And so we drifted about in our tiny craft under the majestic dome of the spangled heavens, keeping as best we could our distance from the dark mass that was the *Island of the Gargoyles*. We conversed in hushed whispers, fearful that our presence might momentarily be discovered.

All through the night Bobby slumbered peacefully in the arms of Dr. Stannard. The scientist refused to permit the sleeping boy out of his hands. I offered to take the child and relieve him from the strain of holding him in such a cramped position for hour on hour. But the doctor merely hugged the lad closer to his own body. Almost like a mother pressing her infant to her breast, he clung to his little ward, and nothing I could say or do would make him relax his hold. It was uncanny . . . it was positively bewildering.

Dawn saw us still drifting, haggard, heavy-eyed, and weary-armed. Bobby stirred restlessly, emitted a complaining little wail, opened his eyes sleepily, and slowly sat up. In bewilderment he gazed about at the unusual aspect of things. A childish question came to his lips and Dr. Stannard placated the fears and doubts of the child with soothing words. Bobby appeared to be satisfied for the moment, but he continued to observe our strange surroundings with consummate wonder in his eyes.

It was now light enough to see our way clearly along the shore. As nearly as I could make out, we were adjacent to the western side of the island. The small harbor, scene of last night's fearful occurrences, lay around the bend on the south shore.

"Our best chance, Dr. Stannard," I suggested, "would be to get over to the northern side and try to make a landing there. If we could keep out of sight of the natives, we might be able to get some shelter there until we make up our minds as to what to do next."

The scientist nodded a grim assent, while his eyes still bore that enigmatic, far-away look. The harrowing events of the preceding night had certainly left an indelible impression upon the man. Or was there some other circumstance of which I was at present totally unaware?

With renewed energy, I applied myself to the oars. We skirted the shore with its tangle of tropical vegetation covering every inch of land down to the very edge of the sea. There appeared to be no signs of life in the dense jungle. Presently we were on the northern side of the island, directly opposite to where the harbor and beach were located. There too we found interminable wilderness, with no indications of the presence of the cretin tribe. The shore was low and marshy, in contrast to the more favorable topography of the southern portion. We welcomed these altered conditions, for they spelled at least temporary safety for us. It was doubtful whether the natives ever had much to do in this tangle of swamp and jungle. So that we could be certain of some degree of refuge here.

I maneuvered the boat up to the shore and in among the mass of interwoven vegetation as far as there was any navigable water. We then debarked and made our way inland. Bobby rode me piggy-back, with his tiny arms entwined tightly about my neck, and he appeared to enjoy the adventure immensely. Dr. Stannard was by my side to lend a supporting hand when necessary—although his own need for assistance in difficult spots was

greater than his opportunity of rendering any to me.

In this fashion we struggled onward, often knee-deep in slime and ooze, stumbling, splashing, clinging to vines, creepers, and low-hanging branches, until we had penetrated inland to a depth of about a quarter of a mile. Here the ground was more elevated and consequently drier. Presently we came upon a small open area in the thickness of the jungle forest. It seemed to be an ideal retreat, and here we decided to remain for the present.

With Bobby and the doctor resting on the ground, I scouted about and managed to gather sufficient material from the surrounding forest to rig up a crude shelter. We breakfasted on a variety of edibles furnished in abundance by the lush vegetation all about us. Of one thing we could be certain—thirst and starvation were going to be the very least of our worries in this haven of refuge.

With our immediate animal comforts provided for and Bobby playing contentedly in the clearing, Dr. Stannard and I began taking stock of our predicament. And it was then that the scientist made a revelation to me, so startling, so utterly breath-taking, that it left me limp and bewildered.

Reaching a trembling hand into an inside pocket, he drew forth a pillbox. He opened it and showed me the contents—*three tablets*.

I followed his glance in the direction of Bobby, peacefully filling a dried gourd with glistening white pebbles, and then back with meaningful suddenness to the three tablets in the box. And at once the whole awful import of the situation dawned upon me. In the hectic excitement of the sudden cretin attack, the fire, and our precipitous escape, I must confess that I had completely lost sight of that angle of things. At this instant, the true state of affairs burst upon me with the violence of a powerful electric shock.

"This is all that stands between Bobby and complete degeneration," said the scientist solemnly. "Only enough for about six days and then"

"But, doctor," I cried with extreme agitation, "we cannot allow it to come to that . . . there must be some way out!"

"Yes," returned Stannard simply, yet with a hopeless note in his voice, "the only way out is to secure more thyroxin tablets . . . but where?" He buried his face in his hands, and his frame trembled with suppressed emotion.

But where? . . . the words echoed through my consciousness. There was the ship. Perhaps the destruction by the vandal cretins and by the subsequent conflagration had not been complete. Perhaps it might be possible to salvage enough of the precious gland medicine to stave off the horrible fate that faced the unsuspecting little fellow.

"We can make a trip back there at about dusk tonight," I suggested eagerly. "There would be less chance at that time of our being observed by the cretins. Then if there is anything left of the thyroxin cargo, we can take it and bring it back here. I'm sure I won't have any trouble finding this hide-out again, even after dark."

"Yes," replied Dr. Stannard wearily, "I suppose we can try that . . ." and there was a certain something in his tone that expressed more vividly than words could portray the utter hopelessness of any such endeavor.

• The remainder of the morning was spent in improving our crude shelter and in getting what rest we could. The doctor and I took turns watching while the other napped. In this way we made up for the sleepless hours of the previous night. In the afternoon we did a bit of reconnoitering through the forest in the immediate vicinity of our little clearing. Apparently we were safe from detection by the cretins. There were no signs of their ever having penetrated into the marshy lowlands that extended across the northern portion of their island.

But of course we could not be certain. There was no way of telling when they might burst through and surprise us in

our hiding place. Our present situation was one of extreme uncertainty—made even more so by the odd quirk of fate which apparently doomed the youngster in our care to a rapid degeneration back to the pitiful cretin condition in which we had found him, unless we could insure him a supply of thyroxin tablets.

I watched with an inexplicable lump in my throat as Dr. Stannard carefully broke one of the precious cubes in half and administered the dose to Bobby with the juice of a tropical fruit plucked from a nearby tree. The child looked up at the scientist with supreme faith and confidence written all over his baby features. He gurgled with delight at this new method of taking the drug. In fact, he was entranced by the whole new aspect of things since they had left the somewhat cramped and humdrum existence on board ship. It was a new life opening up to him—a life of strange sights and stranger occurrences—a life of romance and adventure. His baby eyes sparkled and his merry laughter rang out through the clearing. I turned away with a pang of grief in my heart. For the moment I forgot our own perilous situation—a desperate one, to say the least—in the face of the dire predicament which faced this lovable youngster.

Shortly before sundown we stumbled back through jungle and swamp to where the boat was tied and set forth on our trip, half-way around the island. Bobby was delighted, but suppressed his exuberance at a word of admonition from Dr. Stannard. As for the doctor and myself, there was very little in the way of conversation between us. It was as though each of us were assured of the futility of our mission, yet dared not utter it to the other.

Night was almost upon us when we reached the opposite side of the island. In the gathering gloom, I could make out the dark outline of our vessel. It was not where we had anchored it on the previous night, but much nearer the beach. Perhaps it had drifted ablaze from its moorings, to ground finally in the shallow waters off shore. Risking detection from the beach, I

pushed our little boat closer. My heart sank and Dr. Stannard's face fell in total dejection, as we circled the blackened hulk.

The ship lay partly over on its side, its nose buried in the sands, its charred deck awash. The entire superstructure had been burnt away. Gaping holes in the sides revealed where the avid tongues of fire had eaten right through. Even in the semi-darkness, I caught glimpses here and there through these holes—glimpses that revealed the total destruction that had visited the interior of the vessel as a result of both the vandalism of the cretin invaders and the consuming sweep of the flames. It would be futile to board the wreck. It would be hopeless indeed to attempt any sort of salvaging operations. Only a miracle could have preserved a single thyroxin tablet in that horrible inferno.

Slowly, despondently, I plied the oars, and we drew away from the wreck. Looking toward the beach, I thought I saw several shadowy forms moving about. It might have been my overwrought imagination, or it might really have been some of the natives. It would never do for us to be discovered. As far as the cretin tribe knew, all on board the invading vessel had perished in the blaze. Only as long as they remained unaware of the existence of three survivors, just so long did we have an opportunity to work out some feasible plan of salvation. Once our presence in the vicinity were discovered, our chances of ultimate escape would become exceedingly slim.

In the eerie darkness I turned the boat and rowed swiftly away from the beached hulk. Soon we were around the bend of the island. With difficulty, I located our own little inlet in the stretch of swampy shore to the north. Once more we were in our tiny clearing amidst the protecting shadows of the forest. Again we took turns at napping, while the other remained alert. A fire would have been desirable in order to keep away any marauding animals of the jungle, but, under the circumstances, we dared not risk it, for it meant certain detection by the natives.

And so another night passed and a dull dawn came upon us, while Bobby slumbered peacefully and unsuspectingly in a corner of the shelter.

CHAPTER V

Long Lost

• Plans plans discussions what to do how to do it six days dragged by, and we were no nearer to a solution of the present enigma than we were the day we reached this hidden spot in the wilderness. As to our own safety—Dr. Stannard's and mine—it seemed that our fears of imminent disaster were groundless. So secluded was this clearing of ours that it might be weeks before we were discovered by the cretins—if at all. Life was simple and easy in this immense jungle—there appeared to be no wild animals to endanger our existence—food was plentiful—the climate was mild. We could live here almost indefinitely until chance brought a ship from civilization close to the island, and then rescue was certain.

To be sure, I was leaving out of consideration the fate of Bobby—poor Bobby! Difficult though it was to admit the truth to myself, there seemed to be no hope of extending his period of normal existence. I felt almost cruel at the thought of so blandly consigning him to the fate from which, for a period of more than two years, he had been rescued by the hand of science. Where was my former fondness for the boy? Where was that love and attachment that had been engendered in me from the day that I had become intimately acquainted with him, following his complete regeneration from cretinism? Could it be that the events of the past week or so had produced in me a callousness and indifference that had been wholly alien to me up to the present time? I confided to Dr. Stannard my innermost thoughts. He and I were in no immediate danger. As for Bobby poor thing. . . .

"Never, Newhall!" he fairly bellowed, and his eyes, the eyes which in the last

few days had strangely begun to lose their accustomed lustre, flashed fire. "Never will I desert him . . . not while there is a breath of life left in me. I brought him up from a parcel of monstrous deformity . . . to a condition of normal childhood health . . . and now"

He could not finish, but sank on one knee beside the child, lying on a bed of leaves and covered with our only blanket. The lad was strangely still. He moved his head slightly to look into the anguished face of the scientist. Yesterday the last morsel of thyroxin tablet had been fed to the child. Today a queer lassitude had come over him.

Could it be that the forces of degeneration were already mobilizing in this tiny body? Could it be that before long we would begin to notice those insidious manifestations of returning thyroid abnormality? With kaleidoscopic swiftness, there came to my mind the train of consequences that could now be expected—the succession of alterations and transformations that the scientist had once pictured to me back in his laboratory at the Golden Gate Medical Centre.

"But Dr. Stannard," I blurted out in desperation, "we are faced with a real condition, and not with a theory. We can do nothing for poor Bobby—for the present at least. Yet," and I brightened at the sudden thought, "ultimately there is real hope for the child and for the whole cretin race on this island. If we wait long enough, perhaps the excitement will wear off. Perhaps the intense hatred which these people have toward us may tone down somewhat. Possibly in a short time we may make our presence known, come to peaceful terms with them, so to speak. And *there* may lie your greatest chance. I mean your thyroxin synthesis, doctor. You told me once that the materials for making the drug are very abundant, are probably to be found right here on the island, and in the ocean all around it. Of course, I am assuming a whole lot. Maybe the job wouldn't be such an easy one. I guess it would turn out to be a darned tough one at that. But, if there's the

slightest bit of hope at all, I'll be right on the spot to help out to the very last that's in me—you can bank on that."

Dr. Stannard arose to face me. At the mention of my suggestion for the thyroxin synthesis, his countenance seemed to brighten up. An eagerness came into his eye—a look of determination that I had missed now for many a long day. His jaw set firmly, and the tightness of his thin lips might have denoted a strong resolve. And then, as quickly as they had appeared, these manifestations of inward strength and purpose melted away. His jaw dropped, his lips gaped open, his eyelids drooped over eyes that were suddenly turned lustreless. With a despairing shrug of his stooped shoulders, and a helpless sweep of the hand to indicate abject negation, he half turned and sank to the ground again beside Bobby.

In silence I left them there and made my way through the tangle of swamp and jungle underbrush to where our boat was tied. As I had done every day since taking up our abode in the clearing, I rowed out into the open ocean and scanned the horizon for signs of a passing ship. Now more than ever I realized what a hopeless task was mine. I knew that the *Island of the Gargoyles* was located in a portion of the Pacific that lay far from the established steamship lanes. It might be months before a vessel should happen to pass this way. The chances that one should come close enough to observe my signal, or should land on the island and discover our plight, were so slim as to appear almost negligible.

When the sun was low over the edge of the waste of water, I gave up my daily vigil. With a leaden heart I turned the boat and made for the swampy shore and the clearing. Dr. Stannard was still sitting in an attitude of supreme dejection beside Bobby. It seemed probable that he had not left the lad once during the whole long afternoon.

Next morning I was horrified to observe the first indications of recurring cretinism in Bobby. The signs were unmistakable. Dr. Stannard called my at-

tention to them, and his voice was dull and sepulchral as he did so.

"Do you see the color of his face?" he asked. "Look at the waxy pallor . . . and the skin . . . dry and scaly. Notice his hair . . . no longer those blond, silky curls . . . see how coarse it is . . . like flax. And even his nose . . . short, squat and ugly. He is changing . . . right before our eyes. Good Heavens! . . . can't I do anything . . . must this go on to the . . . bitter end? . . . Bobby . . . poor Bobby . . . my Bobby! . . ."

He broke off in convulsive sobs. Never had I seen the man—*any man*—so terribly affected. I comforted him to the best of my ability. Again he stood up and faced me squarely. As he did so, I had an opportunity of scrutinizing him more closely than I had had for days. And in that swift, searching glance there came to me so violent a shock that I almost collapsed. The very blood froze in my veins, and my head swam dizzily. As through a thin haze, I could see the scientist's eyes staring incredulously back at me. He seemed to sense my amazing discovery, but could do nothing to minimize the overpowering effect that it had on me.

Dr. Stannard, too, was beginning to show in his features, his bearing, his physical self, the indisputable evidences of cretinism!

I rubbed my eyes. Was I really awake . . . or was this some mad nightmare? No, I was awake . . . wide awake. And there, facing me were those same physical alterations that denoted the cretin condition—eyes—hair—skin—ears—nose—in fact the entire facial and bodily make-up. This was no hallucination! This was cold fact . . .

My first thought was that, somehow, the condition was contagious—that the doctor had, in some mysterious fashion, contracted the disease, as one would contract smallpox or typhoid, by association with a victim. For an instant I almost felt as though I too were developing the same hideous characteristics. But nonsense! . . . I knew that this abnormality was not contagious. Could it be then that

. . . no! . . . that was utterly impossible! . . . but yet . . . I looked keenly at the scientist. My eyes seemed to search his very soul.

Silently we faced each other as the seconds ticked by. Dr. Stannard was the first to speak. His words were low and measured, while into his eyes there came a look such as I had never seen there before.

"Yes, Newhall," he said, "you've guessed the truth at last. *I too am a cretin . . . a reformed cretin!*"

I sucked my breath in a sudden low gasp that seemed to congeal in my throat. The doctor's words grated on my consciousness with fearful harshness. They burned into my brain like live coals.

"A reformed cretin," repeated Dr. Stannard slowly, "now doomed to a fate of complete reversal, just as that child is over yonder."

"But . . . but . . . doctor!" . . . I stammered incredulously.

The scientist raised his hand for me to stop. He had a message, and he was anxious to deliver it.

"Please, Newhall, let me explain . . . while I still have the chance. At times I feel that my mentality is slipping. At other times I seem to be in full possession of my faculties. Right now I can think clearly. But I know that I am slipping . . . slipping. Tomorrow may be too late."

He passed a shaking hand across his forehead, as though to brush away the haziness that was trying insidiously to enshroud his brain. Then he continued.

"I was born to normal parents, an apparently normal child, but with the seeds of subthyroidism planted in me. Soon after birth I began to alter. But I was reclaimed . . . much as you have seen me reclaim Bobby. None but my parents and their medical advisers knew of my condition.

"When I became old enough to understand, the true situation was explained to me. I was different, they told me, but only under the surface. As long as I

maintained my thyroxin dosage, I remain outwardly normal. I grew up, became interested in medicine and gland chemistry. I determined to devote my life to the study of the thyroid and its functions in health and disease. I dedicated myself to researches in this field, so that others who might be born with the same gland defect as I had been could yet live normal lives.

"Of course, Newhall, no one suspected in the least that I myself was a living example of the alteration which I sought to effect in others. You remember, don't you, those jesting remarks we exchanged in my laboratory in this very connection? I told you that a reformed cretin might become an outstanding engineer, an educator or a business executive—or even a brilliant newspaper man. And do you recall your facetious come-back? . . . *Or a renowned gland specialist!* You didn't realize, did you, how close you got to the real truth at that particular moment?

"And so I came to learn of the *Island of the Gargoyles*. I saw here an opportunity of putting my theories of regeneration into effect on a large scale. And the rest you know—except that throughout those days with Bobby, I too was taking my dosage of thyroxin. And when the ship was destroyed, together with the supply of tablets, as well as the means for synthesizing more thyroxin, that . . . that spelled doom for both of us—and for the whole cretin population of the island.

"The three tablets which I happened to have in my pocket have carried Bobby along until two days ago. As for myself, the last dose I took was on board the ship the day of the attack and fire. And why, you might ask, have I been able to carry on until now? That, I must confess, has been a source of great wonder to me. Possibly, through all the years of treatment, I had built up a certain resistance that postponed for a week or more the ultimate reversion to cretinism. Perhaps my body retained a measure of thyroxin residue which served to keep back the forces of alteration for that length of time.

"But now it is finished. Now my de-

generation will go along at the same pace as in Bobby. Already I have sensed the approach of that mental lassitude which comes with cretinism. At times, I feel as though I am sinking into a morass of hopeless idiocy. At others, as is the case right now, I find myself apparently in full possession of all my faculties. But it will not be for long. These periods of seeming normalcy will pass. The end is inevitable . . . the price must be paid . . . soon . . . very soon the child and I will have reached the very depths . . . and then . . ."

• With accelerated swiftness, Dr. Stannard and Bobby succumbed to the inexorable devastation of cretinism. The lad, because of his weaker resistance, fell an easier victim to its pitiless ravagings. In a few days, he was reduced to a helpless, whimpering, drooling monstrosity, with his beautiful little body warped into a grotesque caricature of a human being. As for Dr. Stannard, his constitution was strong enough to postpone for a time longer the ultimate disintegration. But it seemed to be a temporary postponement at best. Physically he was tobogganing swiftly down the dizzy slide that ended only when a perfect body had been reduced to a hideous gargoyle. Mentally he was fighting with desperate vigor to stave off the torpor that came as a natural consequence to the cretin condition.

At times he appeared to be almost rational, and talked hopefully of a possible regeneration for both Bobby and himself. At other times he seemed to be overcome by a kind of stupor, a mental sluggishness under the influence of which he sat for hours on end beside the still form of the youngster. During these lapses, he mumbled an occasional incoherent statement, but, for the most part, the periods of vigil over the lad were silent ones. With dull eyes staring vacantly into space, with his distorted body swaying in slow, melancholy rhythm, he sat there hour after hour, and nothing I could do or say prevailed upon him to alter his position.

And as for myself . . . it seemed to me that I should soon go mad. The only seemingly normal individual in a whole world of cretins, I felt that I too should ultimately fall victim to the insidious curse. In fact, there were times when I actually began to experience a wave of mental torpidity come over me—a psychic dullness that I associated only with the fateful approach of subthyroidism. This was pure imagination, I tried to tell myself. Shucks . . . there was nothing wrong with my thyroid gland! . . . yet the alarming symptoms refused to be dismissed so lightly.

I continued to make my regular trips out in the boat in the hope of sighting a ship. These vigils were, of necessity, sporadic. I could not leave the doctor and the child for any lengthy periods, for they were rapidly reaching that stage of helplessness where I had to administer to their smallest physical wants.

Soon there came another alarming discovery. In beating through the jungle underbrush one day, some distance to the south of our clearing, I came upon undeniable evidences that the cretins had been there. The vegetation showed signs of having been trampled down, as though many feet had passed over that spot. In addition, I found a stout club lying under one of the trees. There was no mistaking that weapon. I had seen similar bludgeons on several previous occasions in the hands of determined-looking cretins. What were the creatures doing in the dense jungle here on the northern side of their island? Did they suspect our presence? Were they possessed of some compensating sixth sense which revealed to them the existence of three survivors from the ill-fated vessel? Was it only a matter of time now before our hiding place would be discovered and a swift doom meted out to us?

When I returned to the shelter I found Dr. Stannard in one of those rare moments when he appeared to be almost rational. I determined not to make my discovery known, for there would be no point in alarming him. However, he came

at me with a statement that was a source of considerable alarm to me.

"There is . . . no use, my good friend, Newhall," he said softly, haltingly, deliberately, as though he experienced a real physical effort in choosing the right words and putting them in coherent sequence to express his thoughts. "Bobby and I . . . must submit to the . . . inevitable. We are both . . . cretins . . . both born cretins . . . both destined to be . . . cretins . . . all our lives. Fate . . . has brought us . . . back to . . . the *Island of the Gargoyles* . . . where we belong. These are . . . our people . . . our own flesh and blood . . . this is where we belong . . . Bobby and I . . . shall join them . . . we must go to them . . . soon!"

My heart sank. I tried to utter words of protest—words that would soothe the perturbed spirit. It was a waste of time. As soon as Dr. Stannard had unburdened himself of this startling message, he suddenly lapsed into that semi-somnolence which was now getting more and more to be his usual psychic state. I found myself protesting to a befogged mentality. The doctor merely looked up at me with a blank stare and shook his head solemnly as if to indicate that he comprehended nothing of what I said. I threw my hands up in a gesture of despair and turned wearily away.

● The climax came on the very next day.

I had determined to give up my usual trip in the boat, so that I could be on hand constantly to forestall any rash move on the part of Dr. Stannard. In his present condition, he might do almost anything. All through the morning, the doctor lay near Bobby in a corner of the shelter. One arm was placed affectionately about the child, as though to protect him from harm. Both appeared to be dozing.

Our food supply being low, I stole out into the open and penetrated the forest for a short distance. My foraging expedition was necessarily a hasty one. I came back in perhaps fifteen or twenty min-

utes with sufficient provender to last us until the following morning. I burst into the shelter. One hasty glance was sufficient to confirm my worst fears.

It was empty! . . .

On the heap of leaves in the far corner lay a note—crudely penciled on a leaf that had been hastily ripped from the doctor's pocket notebook. I picked it up with trembling fingers, and read:

"We are going back where we belong—no use for us to fight against fate—good-bye, Newhall—will never forget . . ." and here the note trailed off into an unintelligible scrawl. The few understandable words had evidently been scribbled in a moment of relative lucidity, but the mental fog must have closed in again before he could finish.

Note in hand, I dashed out into the open. There was not a sign of the pitiful pair. I plunged into the dense forest, calling at the top of my voice, shouting their names to the dank jungle. I stumbled through heavy underbrush, tripping, falling, suffering bumps and bruises all unawares. Again and again I cried out for Dr. Stannard, for Bobby. My calls merely echoed mockingly from the tangle of tropical vegetation all about me. They were gone . . . gone forever . . .

Then suddenly something in my brain seemed to snap. It must have been the culmination of the fearful emotional strain of the last few weeks. At any rate, I felt myself in an instant enshrouded in a mist. Things about me appeared distorted and far away, as though viewed through the wrong end of a telescope. My head reeled, my eyes swam, I experienced a peculiar physical lassitude.

My recollections of subsequent events are indeed hazy. I have a jumbled picture of continued wanderings through the forest, of frequent returns to the clearing, of constant hunting, shouting, stumbling, of fits of demoniacal laughter, alternated with spells of melancholic depression, of hysterical sobbing, of wild ranting. The truth of the matter is that I was mad—stark, raving mad.

Presently I found myself in an open

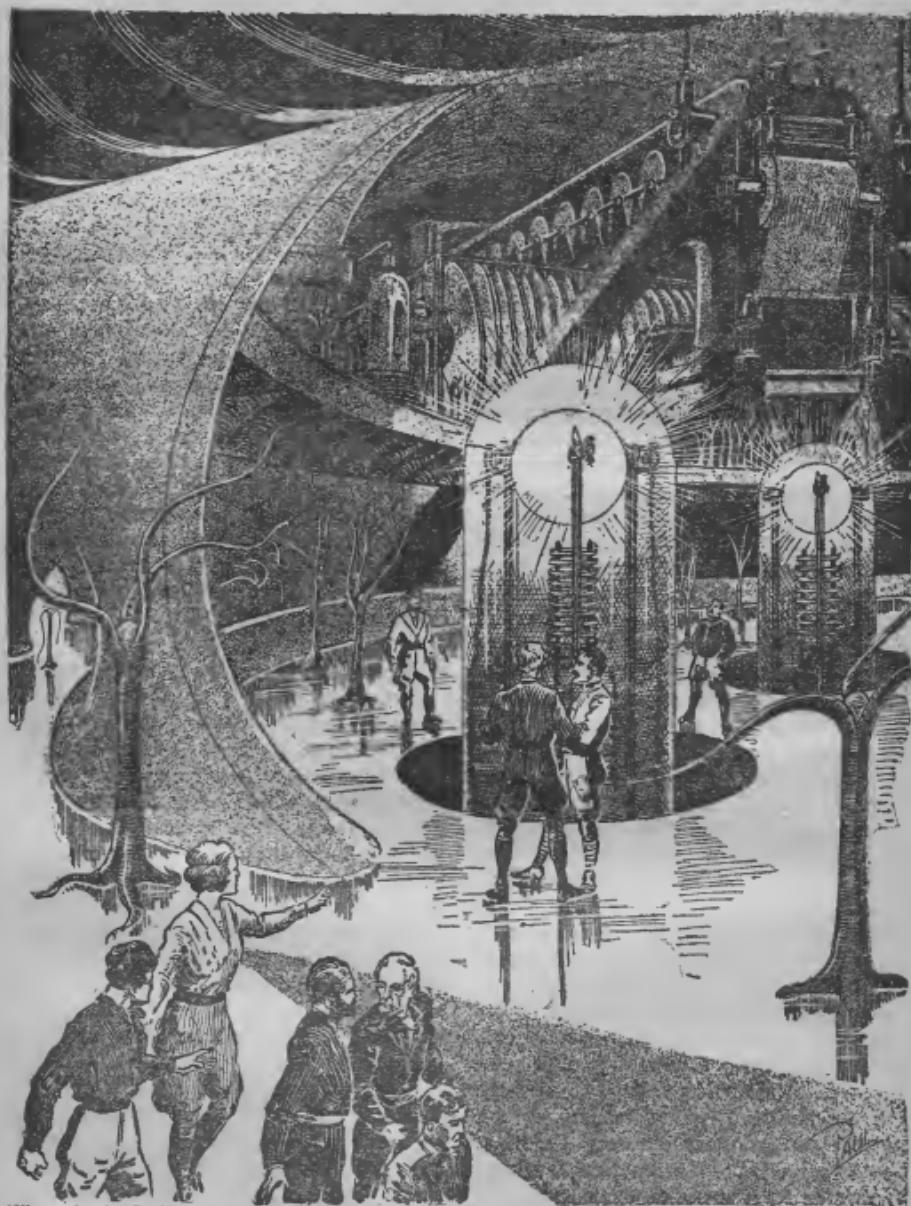
boat—my own boat. I was out in the ocean. A distance away I could make out the low shore of the island—the *Island of the Gargoyles*. There was food in the boat—I must have placed it there myself before starting out. But where was I going? I hadn't the faintest idea. All I know is that I rowed like mad!

Then followed another dizzy reel of fantastic sequences. There were storms that spun my frail shell of a boat about like a leaf in a hurricane. There were periods of calm—soul-seering, blistering calm, when the tropical sun beat down upon me with merciless fury. There was drifting—drifting—constant, aimless drifting. There was thirst—days and nights of it. There were mirages, visions, hallucinations. Dr. Stannard and Bobby seemed to be with me, then they were suddenly gone. I laughed, shouted, sang, wept. I seemed to be overwhelmed by a vast intoxication. This was the end—and I cared not a bit how it was going to end . . . Then suddenly, mercifully, all memory left me . . .

● When I recovered my sanity, I found myself in bed—a cool, spotless bed. I was pitifully weak, but my head was clear. The swarthy individual nearby—he must have been a doctor—answered my questions affably. His broken English bore a strong flavor of Latin-American. I was in Peru, in the Lima General Hospital. A tramp steamer had picked me up adrift in an open boat far out in the Pacific, and had brought me here. For days I had lain in a coma. But now the crisis was past. He assured me that I was going to get well. It would be only a matter of days before I could go about my business again.

Eagerly I sat up and asked about Dr. Stannard and Bobby. And the *Island of the Gargoyles*—had the ship come across that too? And the cretin tribe—any word about them? The doctor shook his head dubiously and with gentle firmness, pressed me back to my pillow. I must not excite myself, he insisted. I had been

(Continued on page 877)



(Illustration by Paul)

They saw things whose meanings they could not grasp, nor ever hope to grasp.

THE PERFECT WORLD

By BENSON HERBERT

PART THREE

Conclusion

WHAT HAS GONE BEFORE:

• Astronomers all over the world, in the tenth decade of this century, discover a new star in the heavens which is later named "Arion." It turns out to be a wandering planet of appreciable size, and the world is terrified to learn that it was approaching the earth, which it would collide with and destroy in a few weeks. The story goes on to tell the effect of this startling announcement on the peoples of the world. There is panic and bloodshed, suicide, immorality, and praying—and with this, many level-headed persons, some of which this story deals with—scientists, for the most part. Lieben, a German, had discovered a new type of rocket fuel to be used in space-ships, and we study him and his actions, along with his friends and daughter, Ilse, through the panic. A few days before the end of the world was to take place, a New Zealand astronomer announces that, for some inexplicable reason and against the laws of nature, Arion had changed her course and would not collide with the earth, but pass at about twice the distance of the moon. Before the world has settled down to normal, a Mr. Guidance, scientist, announces a proposed flight to this new world, although the moon had been man's limit of space-travel hitherto. Lieben, along with seven others, are to accompany him.

Part Two starts off with the eventful trip from the Earth to Arion, during which Lieben's daughter and a stranger who will not give his name are found as stowaways. Much happens during the trip, chief among which is a mysterious noise that no one can place. They land upon the strange world, which puts the ship temporarily out of commission. While it is being repaired, the space-voyagers look around the new surroundings. They discover one monster animal that keeps them in constant terror, and then they find an intelligent tree-man. Ilse spends much time learning the tree-man's writing-language. Nameless turns out to be an enemy of Guidance and tries to murder him, though he fails in this and promises never to try again. As Part Two closes, a party are about to go off with the tree-man to visit his civilization, leaving a few behind to watch the ship. *Now go on with the story:*

• We know from the first two installments of this epic novel that a group of scientists have gone to the newly discovered world, Arion, to see what they can see.

But if you think they have seen really amazing sights, "you ain't seen nothin' yet!" Things happen in this conclusion so thick and fast that you will not find a dull moment, and mysteries that must be puzzling you are solved at every turn.

Many authors forget to consider that scientists are also men—they have the emotions, desires, and urges of other men. Mr. Herbert remembers this, and that is why the human element, which is really what makes any good story convincing or otherwise, plays such a large part in the current novel.

Are the men on this expedition really what they seem? There are many things about them that will surprise you, and you are about to learn them in these last few chapters.

CHAPTER XIV

A Mysterious Disaster

• Those left behind at the soarer were suffering from a bad attack of nerves. Three hours after Guidance and the others had left, the mechanics finished the repairs and the machine was ready to take off. After that there was nothing whatever to do.

They walked up and down, talking and wondering how long their companions would be. They began to be affected strangely by the inactivity and the loneliness, and at times the doctor allowed himself to become irritable.

Herr Lieben offered the suggestion that they should take a short walk through the forest, in case they could see them returning. Mainly to pass the time, the three of them, Lieben, Nacht, and Hesker—did so, but they had not proceeded very far when they were alarmed by a

distant ghostly sound, which echoed as though in a confined space. It sounded rather like a rifle-crack.

Greatly puzzled, they walked in the direction of the sound, but saw nothing out of place.

Then they heard a horrible groaning and inhuman sobbing. They stopped short and listened in cold fear. It was ghastly, very distinct, but not loud.

They began searching in a wide circle, but found nothing. After several minutes, they could endure it no longer and fled. It seemed that something pursued them. Once again, before reaching the plateau, they heard a shrieking and wailing, and they could not control their panic until they were at least a hundred yards from the last tree.

Many miles away, Henry Guidance was leading his perspiring companions through the wild jungle.

As they marched along, the Arionian occasionally motioned to left or right—not as they would have done with one hand, but with all three limbs at once. Dickens shouted the directions to those in front. After a time, *Monsieur Grindin* burst out laughing.

"Why," he said, "not content with pointing his three arms, our grey friend points also with his three feet!"

His companions took notice next time; it was quite true, and very amusing.

"Treeman?" exclaimed the Frenchman. "His name should be *threeman*, not tree-man!"

Ilse laughed.

During their second rest, Guidance was pumping an oil-stove, when, without warning, the ground gave a violent lurch and everyone collapsed flat. They all lay in the postures in which they had fallen, unable to move in the slightest. The oil-stove fell over and caught fire, but no one could do anything about it.

Guidance could not prevent an exclamation of dismay. Was this paralysis the feared attack by unknown weapons? If so, the Arionians had a terrible power in their hands. He struggled to get up, but he could not raise himself an inch. He

felt an immense oppression, a physical oppression, and groans of terror came from his helpless companions. A frightening rumble came from the earth, set the foliage trembling and put their teeth on edge. The Arionian was also affected by the general disaster. His six limbs spread out comfortably, and his brain-exrescence rested on the ground with a suggestion of patient waiting.

There was one of those useful distended water-bladders hanging from a creeper above the leader's head. He watched it, in sudden surprise and alarm, as the bottom swelled out, jerked quickly to a point, and burst. The water fell in a shower on his head, with astonishing force; indeed, he was nearly stunned. The shock of the drenching was nothing compared with the surprise of this one fact.

After a few moments the unaccountable malady suddenly left them, and they all rose thankfully to their feet. They were too much put out to be amused at their leader's wetting, but he himself sat silent and pondering throughout the meal.

The incident of the bladder had put an immense idea into his head, an idea which he saw only dimly, but which perplexed and moved him profoundly. The idea stirred and confused and muddled his mind. He could not quite grasp . . .

"Miss Lieben," said Gystak, wiping his brow, "why not ask your gray friend to explain what happened to us just now? He should know. Why not ask him to explain some of the other mysteries of this cursed planet? Arion has been a problem ever since old Hesker caught the first glimpse of it through his telescope in Königgrat. Perhaps we may learn why it was never seen before then, for example."

"I should be surprised if the Arionian understands these problems," said Hergesheimer, "despite his boasted civilization, of which we haven't seen much so far. They seem pretty crude to me. By the way, *Fräulein*, how do you call him? What's his name?"

"Ach! *Schr komisch!*" she laughed. "He has no name, at least only a soundless symbol on paper. There is no spoken

language, as they have neither tongue nor ears."

"Of course, I'd forgotten. That's awkward for us. I suggest we follow Crusoe, and give him the name of the day on which he was found. Let's see, reckoning from earth, yesterday was a Monday."

"Jawohl! Montag heißtet er doch! Das ist famos!"

Thenceforward the gray son of Arion was called Monday.

The girl asked him about the recent strange happening, but the reply she got seemed evasive, or incomprehensible.

"I don't understand it at all," she said, frowning over rows of symbols. Monsieur Grindin came over to see if he could help, but he was puzzled, although he had been studying Aronian expressions almost as long as Ilse, and the symbolism was undoubtedly very simple.

• Following Gystak's suggestion, Miss Lieben asked Monday why Arion had never been seen before, also how it was that the earth had been miraculously saved from a collision. To her immense mystification, she received the same reply to these two questions as to the first.

"Ah," exclaimed Guidance, starting from a reverie, "I knew it! Find the solution to *one* of these problems, and you have solved them all!"

"What! Do you think you know the solution, then?" said Gystak, but he would not answer their curious questioning.

"To tell you the truth," he said quietly, in an aside to Hergesheimer, "I have only a very foggy notion in my head, and for the life of me, I can't get hold of it properly."

He sighed, a worried expression on his dripping face.

When they were moving off, Monsieur Grindin caught his foot on a fallen branch, and as he stumbled, his rifle fell to the ground and produced an uncommon clanking noise. Rather startled, he bent down and dragged aside some of the undergrowth near the base of a tree. A shining round object appeared to project

from the ground and pass into it again a foot or two away.

"The devil!" he said, kicking it. "Look what we've got here!"

It was an ordinary metal drain-pipe!

But no one had time to inspect this new discovery. Monday was near the front of the line, suddenly halted and turned around. He stood as though watching or listening intently, but we know he had no apparent eyes or ears, towards something in their rear. Then he became agitated.

He went to Miss Lieben, who gave him paper and pencil, and began drawing symbols rapidly. She read them at a glance, and the others saw her turn pale. Gystak heard her whisper "*mein vater*," then she pulled herself together and addressed the company.

"Our friend Monday," she announced, "tells me that we must return to the soarer at once. I can't tell how he knows, but he says that something strange is happening, some danger threatens. At once, he says—at once!"

The rest could do nothing but obey. To their amazement, however, instead of returning along their tracks, Monday and the girl began to run forward, in the same direction in which they had been going, directly away from the plateau. Resentfully, not a little puzzled, but trusting blindly, they raced after her. Guidance, as he plunged and stumbled through the trees, felt that he was not acting in a leaderly manner at all; where was caution and prudence? Gone to the winds! He forgot them and impatiently wiped his brow with the back of his hand.

The Parisian caught up with the girl, and the two ran side by side through the close damp jungle air.

The trees thinned and ended. There was a large open space, a gentle hollow in the ground, and in the centre stood a few huts, flat-roofed and crude. Nearby was a large circular opening, like some kind of pit. The sense of wonder of the explorers had been greatly lessened by the horrible heat, and the irritation of many insoluble problems, yet when they

drew closer and looked into the pit, none could suppress a gesture of awe.

For the opening, possibly two hundred feet across, was covered by a single sheet of clear glass. It had been delicately polished into a gentle concave form; nowhere did an air-bubble, a scratch, or a strain spoil its beauty. It was a wonderful piece of work.

While most of them were staring at this lake-like expanse of glass, trying to guess what its purpose could be, Monday ran to one of the huts and pulled out a curious machine.

"Is that a flying machine?" asked Gystak. "Surely, that is never meant to fly! Notice all the blades and paddles and curving wings."

"It is like the result of a collision between a paddle-steamer and an ornithopter," said Guidance, laughing nervously.

"Hurry up!" cried the girl. "He wants us to get in."

Already there was a strange flapping and trembling going on in the machine, and they looked on doubtfully as the girl clambered through a mesh of struts and curving vanes into a long shallow receptacle. It was exactly like a tin bath, inelegant and bare. There was no sign of seating accommodation, and the sides seemed far too low for comfort.

With many misgivings, Guidance climbed in and the others followed more slowly. The seven of them just filled the space, and they stood, packed, hot, and awkward. Monday was somewhere in the sub-structure below them, his three feet braced in three special slots.

There came a rumble, a whir, and a great flapping from above. Wings beat down upon them, paddles twisted and washed the air, the floor trembled and strained uncertainly. The thing had no wheels, but large stiff legs on coils, like springs.

Suddenly the machine was raised an inch or two, bounced, and ballooned up to several feet. A gentle breeze caught it, and sent it swaying occasionally bumping the ground, drifting athwart the clearing. Then a more vigorous life seemed to ani-

mate its flickering vanes and it soared to thirty feet. It passed over the tree-tops at about twenty-five miles an hour.

It was the strangest flight conceivable. The seven felt top-heavy and ludicrous in the shallow bath, with paddles and whining surfaces spinning around them, gesticulating grotesquely. The machine shivered and swayed, sometimes jerking upwards or sideways, to avoid a tall tree.

After half an hour they were dreadfully fatigued and the plateau was a welcome sight. The leader had been getting more anxious; if Monday was right, what catastrophe had overtaken the soarer? Had they been attacked by *Lämmchen*, or had a new earthquake tumbled the machine into the fissure, which it had already avoided twice? Perhaps they had been overcome by some fresh, inconceivable peril.

Guidance felt an extreme impatience as they drew near the plateau, and at the same time a certain reluctance to learn the truth—it might be too dreadful; it might be fatal for the whole party.

The machine, with the eight aviators, hovered over the edge of the jungle; Mount Levitation appeared clear and immense before them. Guidance drew in a breath and leaned over the side, surveying the wide expanse.

A sudden aching desolation swept over him, almost before he felt alarm. Not a single human being was to be seen along the whole length of the plateau. *Soaring Rocket No. III* had vanished without a trace!

• The flying machine circled over the plateau, glided down, hung against the wind like a parachute for a moment, then dropped to the ground. The aviators climbed out in stunned silence. Their one hope of returning to the earth had vanished with the soarer. Realization of this terrible fact prevented them from thinking clearly. Until Gystak proposed it, no one thought of making a detailed search, with the aid of Monday's machine.

"You are right," said Guidance, "we might come across a survivor of the catas-

trophe, or some clue as to what has happened. But, first of all, Miss Lieben, be so good as to ask Monday if he knows what happened."

"He says that he doesn't know, Mr. Guidance. With his unearthly senses, he perceived a confusion and bustle on the plateau; but the next time he looked—so to speak—it was deserted."

"It is ironic," said Hergesheimer gravely. "Dr. Nacht warned us so carefully of the perils of wandering into the unknown Arion: now some strange fate has overtaken him."

Despairing and mystified, the travellers entered the flying machine and Monday ascended to a hundred feet, so as to give them a more comprehensive view. As they were climbing, Dickens cried out that he saw a metal object some distance away.

There was a trapdoor in the floor through which Monday and the girl could interchange messages. They headed towards the object and saw that it was a rifle. What did this solitary relic mean? They landed and made a closer inspection. There was a piece of paper tied roughly around the barrel with a string. On it, in pencil, the following message had been hastily scribbled:

"God help me and the rest. I am being carried off."

"My father!" said Miss Lieben quietly.

It was evident that the engineer had intended to write more, but had been interrupted. The last part of the sentence was less legible than the first.

They must have been attacked and forcibly removed. But where? And what had happened to the soarer?

"The message offers an indication of the direction the attackers went," said Gystak. "Obviously, Lieben dropped his rifle while they were on their way, because it is large and would attract our attention. Now the line joining the site of the soarer and the place where the rifle was dropped gives us the general direction."

On this slender chance, they took off once more and flew low over the tree-tops for many miles.

Miss Lieben broke the gloomy silence; it was easy to speak above the *whirr* of the vanes.

"Monday tells me," she said, "that there are wild parts of the remoter forests which the Arionians never bother to visit, and many strange creatures inhabit these parts. He thinks our friends may have been attacked and kidnapped by some of them."

There seemed nothing to reply to this pessimistic information, and profound silence fell upon the party. After a time, Grindin realized how uncomfortable Miss Lieben was, so he arranged some seating accommodation with the haversacks. The criss-cross of legs was rather complicated, and they could scarcely move, but it was better than standing.

They must have passed over thousands of square miles of territory before Guidance spoke again.

"How is it we have never seen any free natural water? With the air saturated like this, and all this prolific vegetation, there must be a large body of water somewhere, a considerable area exposed, either rivers, a lake, or a sea. Then, it has not rained since we've been here. Yet another mystery! The longer we stay on Arion, the more incomprehensible it becomes. Fräulein, ask Monday how it is we have seen no lakes or rivers in this mountainous country."

"Very well . . . he does not seem to understand the question."

"Oh, leave it. Another thing! Where on earth is this Arionian civilization? We've flown hundreds of miles, and we've seen only two miserable huts. Where do they live?"

"I will ask him . . . he answers, *everywhere!* What do you make of that? *Everywhere!*"

"Evidently he misunderstood again."

"But no, he did not hesitate."

"But the answer is absurd."

"Undoubtedly."

"Look to the right!" shouted Dickens.

From a clearing in the forest, a great metal structure, stiff and straight, rose up

in a slanting direction and buried its top in the blue clouds. It was like the one they had already seen from the ground. A few miles further on they came to something so tremendous that a grotesque quality of unreality came into the flight and remained there until they landed.

It was a colossal hollow cylinder, lying on the ground, at least a quarter of a mile wide and a mile long. One end of it appeared to merge into a hill-side, while the other end was unobstructed. They flew around it for some time, not able to believe their eyes.

"Is it possible!" ejaculated the leader. "Miss Lieben, ask Monday what this infernal thing is."

She scribbled a message and received a reply through the trapdoor. For a long time she studied it, then blushed and became confused.

"I don't understand this," she said. "What I need," she admitted, "is another lesson in Arionian. When we land again, I'll see Monday, and I hope we shall be able to clear up many questions then."

Grindin pondered over the symbols, but gave it up in despair.

After a time they were forced to land, to rest from the persistent heat and partake of a meal. Gystak was hammering a can-opener into a tomato can when a sudden thought struck him.

"Strange!" he said. "Can any of you remember seeing Monday eat yet? Surely he must eat."

No one had seen him eat.

The girl explained that the Arionians could go three or four days without food; in fact, it was usual to have a meal only every three or four days. She said this seemed peculiar, because we are accustomed to follow the natural rhythm, repeating a daily cycle.

But how, in the name of heaven, did they eat? They had no mouths, or anything that appeared like a mouth.

She did not know, she said. Shortly, many things would become clear when she had had a further lesson.

• A shot sounded from the depths of the jungle, faint and sharp. The startled Gystak cut his finger with the opener, and everyone stopped what they were doing. They had landed in a small clearing and were seated around the flying machine.

Monday was as worried as they were. Fire-arms were not used on Arion, he said. Who then had fired the shot—a survivor from the *Soaring Rocket No. III*, or one of the men who had vanished previously? Whoever it was, he must be found at once.

For comfort, most of them had taken off their long hot boots, as well as their packs, rifles, and ammunition, but three of them were still fully equipped—the girl, the Parisian, and Nameless. These set off at once towards the direction of the sound while the others prepared to follow.

Guidance listened anxiously for further shots, but he could hear nothing more save the sounds of his three companions as they made their way from the clearing.

A few minutes passed, but nothing more occurred.

Then everyone stood quivering with excitement—as a loud crash came from the forest, a splintering and breaking, shouts and screams. As Guidance dragged on his boots, a horrible groan was heard. It was frightful in the clearing, not knowing what danger had overcome them, out there in the forest. They moved together into a group, silent and appalled, but Guidance strode forward. He had only gone a few paces when someone broke from the forest and staggered across the clearing. Only one of the three had returned—it was *Fräulein Lieben*. She was waving her arms and screaming.

"Run for your lives! Run! Run!" She turned back and the others followed.

"I know what happened to the missing men," shouted the girl to Guidance. "The one who fired the shot was lying at the bottom of a concealed pit with some others, unconscious or dead, around him. I got there first and looked back in time to see the ground give way beneath Name-

less and Paul—*Monsieur* Grindin. They had fallen into another pit—I ran and looked over."

She was hoarse with emotion.

"Paul was wriggling about—I think his leg's broken, but Nameless fell on his head and he's lying still."

When Guidance and his companions reached the concealed pits, they were filled with dismay. Hastily they tied creepers together and brought up the injured and the dead. Nameless was killed, and in the other pit only four were left alive, three of them unconscious. None had escaped serious injury.

While the injured were being attended, the girl conversed with Monday, who seemed very agitated. He had much to say and she translated to Guidance.

"These cursed pits," she said, "were made by the Arionians as a warning to the *Lämmchen*, and as a punishment, in case they strayed into parts of the forest where they were not wanted. It is part of their training as beasts of burden to keep to certain tracks. Monday hadn't realized that we have eyes like *Lämmchen*; as we know, obstacles do not hinder his vision, and the pits are not concealed to him. He is very concerned and apologetic, and rightly. He is going to show us some more pitfalls in the forest, where we are sure to find the others who are missing. But first, he says, he will fetch more Arionians, with flying machines, to help us with the injured."

"I wonder if the doctor's party fell into a pit," said Gystak gloomily.

"This is a dreadful business," muttered Guidance. "Will any of us get back to earth alive? There goes Monday to summon help. He must be quick. If any are left alive in the pits, they will be dying of starvation."

To everyone's relief, in less than ten minutes a fleet of six machines appeared in the air and landed one after another.

By nightfall, all the pits had been searched and the survivors made comfortable. Everyone was accounted for, except those in the soarer. The Arionians dressed the broken limbs efficiently, and

brought soft matting and pillows. The survivors were so pleased to find themselves rescued that their cheerfulness did much to make the others forget that some had died.

The evening meal, with the quaint Arionians looking silently on, was almost bright with the atmosphere of reunion. But Guidance could not forget the sinister disappearance of the soarer.

The girl sat beside the Parisian, who was lying outstretched on the Arionian's comfortable mats. He was out of pain, but she insisted on feeding him.

Gystak was watching the unearthly grey creatures curiously.

"I wish they'd hurry up and eat!" he said. "I'm dying to know how they manage it!"

Some time later, Gystak was looking at his film-negatives, which he had found time to fix. There was a markedly thoughtful expression on his face as he held them up to the light in turn.

"That's funny," he decided, "very funny, to say the least. Our Czechoslovakian, Mr. Hesker, doesn't appear on any of these negatives? Can't see his face anywhere. Now I come to think of it, he wasn't even in our group picture, in the *Münchener Illustrierte Presse*. Peculiar"

CHAPTER XV

ILSE's Diary

After the evening meal was finished, Henry Guidance went to have a look at one of the curious Arionian flying machines, which were sanding nearby.

On the way he stopped to pick up a notebook which he saw lying on the ground. On the cover it had printed in black ink—

ILSE LIEBEN

Tagebuch

It was Miss Lieben's diary, which she must have dropped. He turned around, intending to give it back to its owner, but it opened in his hand and a sentence caught his eye. Idly he read a few words,

but they were enough to arouse his attention, and he gasped.

He realized that he would have read the whole lot. Rather guiltily and hesitatingly, he made his way to a quiet corner and opened the book.

He tried to justify his conduct by saying that he was the leader, while she was an unwanted stowaway; besides, it was essential for him to know exactly what was going on. He was beginning to suspect that quite a number of things were happening without his knowledge; the more he knew, the better he could be prepared for—anything.

Yet he felt an uneasy reluctance as he opened the book.

On the very first page, he got a shock: "Blessed Mr. Henry thinks I joined his trip through scientific enthusiasm! Well, it won't do him any harm to think so."

So she had lied to him.

"I wonder what his opinion would be if he knew that I hid myself on the soarer because I was scared to death of being accused of stealing the Gräfin von Freiburg's necklace?"

Guidance started. Did this explain the arrival of the police at Templehof aerodrome?

"The countess herself said quite plainly that she suspected me, but the real reason why I was so frightened was because the idea was so near to my own intentions. At times, I had actually imagined myself doing such a thing. It seemed so ridiculous that she should be wearing such a useless article around her neck, and that I should have to watch it, day after day, and be in so much need of its money value. When I learned that someone had really stolen it, I was startled.

"But the main reason for stowing myself away was to 'hook' Paul Grindin, and I think I've nearly succeeded in doing that. Ever since I saw his photograph for the first time, in a tram in München, I have wanted to meet him—"

Guidance closed the diary; he did not wish to read any more.

Well, at any rate, it was owing to Ilse's proficiency in languages that they had

been able to speak to Monday and understand a few of his replies. That much was due to her.

He thought he knew now why Grindin appeared to be getting somewhat braver. If she was the cause of that, then Guidance could forgive her something.

Now he remembered: at first, Grindin had called her Miss Lieben, then Ilse, and finally Ilschen. The "dear diminutive!" The beloved Elizabeth! Huh!

Suddenly he realized the true reason why the Frenchman had applied for a berth. It was obvious that he would do the right thing in Ilse's eyes; moreover, if his plan had worked as intended—that is, if he had not made himself drunk—he would have been left behind when the soarer took off—left behind with Ilse, and Ilse's father unable to interfere!

Guidance could not help laughing. It would have been amusing if both their plans had worked—if Ilse, in order to be near Grindin, had gone off in the soarer, while Grindin, in order to be near Ilse, had stayed behind!

Guidance was surprised when he caught himself laughing. How could he laugh when he had so much on his mind? Then it came to him that he had one worry less: Gwilyn Thomas had been killed in the pit.

While he was in this mood, he felt an amused curiosity to see what were the latest words in Ilse's *Tagebuch*. He picked up the book again and glanced at the last page that contained writing. There was part of a sentence continued from the previous day:

"—and I wish Paul was not quite so slow and timid. I wish Nacht did not look so dark and serious. I wish Smith was not so preoccupied. I wish it was not so beastly hot

"Mr. Gystak is quite a nice man. I do hope the Stuttgart *Tageblatt* will give him a lot of money, as they promised, if ever we get back to earth and he prints the story of the flight and sells his photographs."

The book fell out of the leader's hand. His friend, Gystak, was still in the employ

of the Stuttgart newspaper! That was the reason he had joined the expedition! He was here as a journalist, not as a pilot, but he knew he would have to act as pilot; otherwise they would not have found room for him!

Guidance had always had complete confidence in Gystak.

He picked up the book again, but, after a moment's hesitation, he closed it firmly. He was frightened of learning any more.

His mood of amused curiosity had vanished; he felt despair and bitterness at this deception practised by Gystak, his former friend.

• At dawn there was a tremendous bustle and confusion in the camp within the clearing. Everyone had awakened with a start, their dreams roughly disturbed, and those who were able had sprung from their beds with a shout.

What was the screaming and roaring which filled the heavens and deafened their ears? The disabled peered about while the others searched the sky with prismatic glasses. The roaring noise stopped suddenly, and only the whining and shrieking continued. It was unnatural and alarming.

The Arionians gathered in a cluster and pointed with all their arms at the zenith. Dickens jerked his head and pointed also, unable to speak.

A huge object broke through the base of the blue clouds and descended with frightful speed in a flat spin.

The Soaring Rocket No. III!

Where had it been, and who controlled it? If they did not correct the spin, she would crash into the trees and burst into flames.

Round and round, round and round, the onlookers shuddered as they heard the whistling of the air getting louder.

Half a mile from the tree-tops, the spiral ended and the machine entered a stable glide. Soon the external-combustion engine was firing again.

Guidance, Dickens, Miss Lieben, and Gystak climbed into a flying machine and took off with Monday, followed by a

second machine, while Grindin and the rest remained to look after the injured.

As they gained height, the soarer dipped, to acknowledge that they had seen them. The soarer circled so as to enable the flying machines to keep pace; their poor twenty-five miles an hour made them seem to hover.

Guidance was consumed with curiosity and doubt; he couldn't understand it at all. Perhaps Dr. Nacht and the others had escaped the attackers, or were the attackers pursuing? The pilot was evidently clumsy; Gystak should have been on board—he would not have stalled her.

Guidance had built the soarer—and he watched it with straining eyes. It was a dead calm day, and he wondered how they would manage the landing; no wind meant a speed approaching a hundred and fifty miles an hour, and an extra long run before coming to rest; it was the most difficult of conditions. He was anxious. The girl watched eagerly, to see if she could catch a glimpse of her father.

Another minute and the plateau appeared below them. The soarer dropped a smoke-bomb to find the direction of the wind; it burst and the smoke rose straight up. The two flying machines descended, and waited for the soarer, which circled uncertainly.

At last the pilot decided to land and cut off the engine. The soarer came down from five hundred feet in a rapid glide. The pilot was descending too fast. He realized this, fired the engine, and circled again.

He cut off, and once more approached, but at a steadier pace—a hundred and fifty-five miles an hour, just above stalling point. The soarer lost height with a clumsy S-turn.

"I wish I were up there!" exclaimed Gystak impatiently; he was the only pilot competent to land and take-off; the others were only expected to relieve him during flight.

The machine neared the ground and began to flatten out. Guidance, his eyes intent, pushed forward and stroked his chin with his hand. The man had flattened

out too soon. For, undoubtedly, it hovered almost motionless, then it stalled and the nose dropped to the ground with a terrible crash.

Guidance ran forward with a gurgling cry as the fuel tanks exploded and poured their contents over the hot engine, which caught fire. A figure was seen to jump from the soarer and stagger a few yards, his hands over his head.

"Hesker!" shouted Dickens. Flames rushed and roared. Part of the metal engine dripped to the ground, a white-hot liquid. By the greatest good fortune, Guidance and his companions were able to reach the blazing machine while the flames were confined to the rear. They dragged out the unconscious bodies of Nacht and Lieben, but one mechanic could not be saved.

A few minutes passed and the flame died down, revealing the twisted framework which had cost so many thousand to build.

The rescuers were unable to think; they were utterly stunned. Mechanically, they attended to Nacht and Lieben, and to Hesker, who was badly burned and would need much medical attention. The rescuers themselves, under the extreme tension, were not aware of their own burns.

Guidance was unable to speak or do anything. He stood as near to the smouldering wreckage as the fierce heat would allow, and began slowly to realize just what this disaster meant.

He was ruined financially, but that was meaningless in their present desperate position.

They were doomed to spend the rest of their lives on Arion. For all hope of return to the earth was gone. They could never build another soarer, as they had no technical equipment, no workshops, no constructional engineers. The rare chance of a rescue expedition from the earth was not to be considered.

Guidance staggered as the full force of the situation came to him; he could hardly tear himself away from the scene of the disaster. The others led him away and tried to console him, but it was mockery,

for they themselves had as yet barely grasped what it meant to them.

The débris smouldered for hours and the ground nearby burned their feet for a whole day. It was no use standing morbidly watching it, so everyone returned to camp, and no attempt was made to conceal their despair.

Looking very much out of place, the gray Arionians wandered silently in and out of the camp.

- Except Hesker, everyone recovered consciousness in a few hours; he had been caught by one of the bursting tanks, and he was badly injured. Guidance, resigned to the prospect of a life-time on the blue planet, went to see the doctor, who was lying comfortably on an Aronian mat under a shade.

Nacht raised himself a little and groaned. Guidance thought it was with pain, but it was remorse.

"Do you feel like telling me what happened, Doctor?"

"How can I ever express—it is no use apologizing—"

"Why, what do you mean?"

"Haven't you guessed?"

"Nacht, I am at a loss. Guessed what?"

"It was dreadful after you left, dreadful. I told you at the time about my premonition, Mr. Guidance—I was certain you would never return. I wish to convince you of this—I was *morally certain* I would never see you again. How can I make you believe that?"

"Please do not work yourself up. Whatever happened, it is past and done."

"Somehow, what I felt spread to the others, except the engineer. Hesker was in complete agreement with me all along. Ask his opinion, and he will tell you—"

"Hesker is badly hurt. He has not yet recovered consciousness."

"Barely three hours after you had left, the mechanics finished the repairs to the soaring machine, and she was ready to take off. Then there was absolutely nothing to do. We sat or walked about, wondering how long you would be. For some

reason, our nerves were affected by the inactivity. At times I gave way to my unfortunate temper, and the heat—you know.

"The engineer suggested a stroll through the outskirts of the forest, to see if there were any signs of your return. 'They will never return,' whispered Hesker gloomily, and I agreed with him, but we went on. We had not gone far when we were startled by a faint ghostly sound, which echoed in a confined manner. It was like a rifle-crack. We looked at one another, puzzled; then Hesker, Lieben, and I set off in the direction. We perspired for two miles, but saw nothing unusual. Then, by heaven, we all heard the horrible sobbing and groaning. It was not loud, but very distinct. We shivered with fright and turned pale."

Guidance smiled grimly, and cut short the narrative with a brief explanation.

"Ah, so it was our poor companions in the pits? If only we could have found them!"

"You can readily imagine, Guidance, what a state we were in. We searched about, but found nothing. At last, trembling, we fled from the forest and heard some more of the ghostly sounds before passing out. The horrible mutterings and cries seemed to come from our very feet. It was like something—buried. We were well-nigh demented when we got back to the soarer. Try to see our position through our eyes. Without trying to give a compliment, I mean it when I say that we lacked the steady influence of your presence and leadership. Those we had left behind did not believe us, so they went into the forest—they came back different men.

"We stood around the machine, discussing nervously. Herr Lieben alone retained an amount of calmness which astonished us. All at once there was a crashing and trampling from the jungle, and a *Lämmchen* came running at a fast pace across the plateau. Behind it was another. Something had irritated them; we knew not what. They came straight for us and their destructive intentions were plain.

"Without delay, we bundled into the soaring machine, and we would have taken off then, if it had not been for Lieben. He shouted us down. 'Don't be silly,' he said, 'they won't harm us in here.'

"He was right, but it did not calm our thoughts to see those huge double-headed beasts running around us in circles. Then Hesker came to me. 'Doctor,' he said, 'what is the use of waiting any longer? For my part, I am convinced they are already dead. That haunted forest is no place for man. If we go back, now, we might reach the earth, but not if we stay any longer.'

"Although I felt that he was right, my conscience told me to wait longer, and I argued with him.

"A few minutes later, the unaccountable thing happened, the final blow which was to deprive us of all self-control. It will seem absurd, but hear me out. I am not trying to find excuses for our conduct. Lieben himself will bear me out, if you ask him.

"From the blue cloud above, an intensely brilliant red beam of light appeared at a sharp angle and enveloped the whole plateau. To our startled eyes, everything seemed dripping with blood. Our faces were ghastly. It was the sudden change from blue to vivid red, I think, which made the effect more profound. None of us could think clearly in that moment. 'Let's get out of here!' shouted Hesker, and everyone began preparing for the ascent, that is, all except the engineer. He expostulated and shouted at the top of his voice. Fools, we did not listen to him. I gave him a push through a door, he fell into a room, and I locked it, hardly aware of my unpardonable action.

"We were no longer reasonable creatures, but were swept away by fear—fear made us do mad things. One of the pilots fired the engine, and in a moment we had taken off. When we had passed through the blue mists and left the atmosphere entirely, the quiet of space calmed me and I began to see things in a different light. I suggested to Hesker that we turn back and make a search for you, not landing, but

remaining in the soarer. 'At least,' he replied, 'let us discover how far off the earth is first.' It was apparent that the madness was also leaving him.

"I looked round for the sun so as to get our bearings. Confound it, I said, where the deuce is the sun?

We rose higher, and in desperation made a complete circuit of the planet. And, you know, there wasn't the least trace of the sun to be found anywhere!"

Guidance stared at Nacht, thunderstruck.

"You mean—"

"We searched everywhere and swept the heavens with our instruments. It is ridiculous, impossible, if you like, but there was no sun to be seen, nor anything like it. For a long time we hovered, perplexed, pondering on this insanity of the universe. Had we all gone mad? That occurred to us. Then we turned back; there was nothing else to do. It goes without saying that there was no indication of the earth, or of any other planet. What do you make of that?"

CHAPTER XVI

Only Human

- Henry Guidance could make nothing at all of the mystery. Their bodies had been cast on the blue planet, there to remain till they died, and it seemed that their minds were to be tortured by every kind of perplexity. They were not even given the consolation of comprehending their fate. They were like children—they could not understand the simplest, most elementary things in their environment.

Always in the background of their consciousness were the many mysteries of Arion, irritating and annoying, from the mysteries of the planet as a whole, down to little trivial things. Now, to cap all, they had lost the sun! Guidance felt himself confronted by the symbolic figure of nature, concealing a rather malignant grin behind the veil.

"Really," he said, "this is too much . . ."

On the second night after the soarer had been burnt out, Guidance was sitting on a mat, gloomily eating some biscuits. He was resigned to his destiny; he knew that no hope remained. He was fatigued with thinking over insoluble problems, and he allowed his mind to relax. He saw himself enthusiastically constructing his first venture, the *Soaring Rocket No. I*. He recalled how horrible had been his dismay when it ignited and fell into the Atlantic. His mind turned blacker as he remembered how his beautiful *No. II* had been shattered by an explosion. Now *Number Three* with its vastly improved external-combustion engine, was a twisted, smouldering, unsightly skeleton of oxidized metal.

Was this the end of his achievements? The spirit of Santos-Dumont rose up in him. He would work, and work hard, till he had sufficient money for a fourth attempt. Perhaps a change of name would change his luck. *The Guidance* would be good . . . Tim would be pleased with *that* name. It occurred to him that he was fonder of Tim than he had thought.

The sudden sight of a two-headed monster, staring at him from behind a tree, made him realize that he was no longer on earth where he could earn money, buy workshops and material, and indulge in such luxuries as youthful cousins.

He looked around at the circle of his companions, the people who were doomed to live with him till they breathed their last breath of Aronian air.

They were sitting or lying around a low fire in the centre of the clearing, in a gloomy silence. All those who were still living were there, except Lieben and his daughter, who were talking together in low tones a few yards away. Hesker was there, lying down and very much bandaged; Monday also was standing inside the circle, his three arms swaying solemnly and gently. Occasionally a treeman would come out of the forest and stand looking at the group.

Directly opposite, Grindin was seated. The leader looked across at him, intently and moodily. Whether his regard for Ilse

had changed his character or not, he was not trying to conceal his emotions; he had ceased to worry about the opinions of other people; his face and his being were full of despair.

At the extreme right and left were Mr. Dickens and Alfred Smith, the surgeon from the Isle of Wight; the doctor was one of the unfortunates who had fallen into the pits and had suffered severe abrasions to his left knee. Both were staring morbidly and fixedly at the ground.

Next to Dickens sat his employer, Mr. Hergesheimer. Such had been the rush of events and the culmination of disaster that Guidance had almost forgotten that the New Zealander had tried to steal Lieben's plans. Herr Lieben himself had hardly spoken to Hergesheimer since he had caught him. It was remarkable to note that all the joviality had not yet died out of Hergesheimer's expression.

Dr. Nacht was next to Hergesheimer; his dark face did not seem graver than usual, but his thoughts were rarely visible.

The pilot, Gystak, and Hesker, the Czech, were seated between Grindin and Smith, and shared the general gloom.

The silence was broken in a startling manner by a low laugh, which made everyone look up. It was Alfred Smith, the surgeon.

"Well," he said, with a grim smile, "I'm the only one who's getting what he wanted."

Everyone stared at him curiously.

"What on earth do you mean?" exclaimed Guidance.

"Do you know the reason why I came on this expedition?" continued Smith calmly. "I'll tell you—it was in order to commit suicide."

He paused a moment and looked around at his fellow-explorers.

"You see, I was, and I am, wholly tired of life and living, and I was determined to depart from life somehow. But I did not wish to create a scandal, so I chose this ingenious way. I would come to Arion, and—lose myself. People would think I had succumbed to the perils of the

blue planet. Now—well, the disaster to the soarer has relieved me the necessity of committing suicide."

The astonished expressions on their faces changed to horror.

"So you see," he repeated, "I'm the only one who's getting what he wanted."

● Abruptly Dickens stood up and laughed out loud. Everyone turned and looked at him.

"You're wrong there," he said. He began walking nervously and restlessly to and fro. "I suppose I may as well tell you," he went on. "Our lives are as good as finished here and now. It will pass the time . . . It really concerns my wife. It was two years ago when I first met her, and less than five months later I proposed. I married her under false pretences, financially speaking. It was really a criminal thing to do, and I have no excuse whatever for doing it. I said I had such-and-such, but I hadn't. Very soon, she found out.

"She was outraged, but she could not obtain a divorce for that; she was too frightened of public opinion to suffer a separation. Instead, she took a more subtle revenge by nagging me continually. Before I married her, I knew that she was expensive, but I did not realize just how much she loved luxuries. After a few months, I came to realize this very clearly, and it dawned on me also how vile and stupid it had been of me to marry her at all, my financial position being what it was. I will not harass you with details of the stages through which I passed.

"The criminal extent of my misdoings began to prey upon my mind and I looked about for means of righting the wrong. I realized that I was entirely responsible for the whole thing. Then, one day, I went to an insurance company, one of the modern kind which insures for everything except suicide. Here was one way to settle matters—to relieve her of my obnoxious presence, and to establish her financially. I began a search for the most risky and perilous job I could find . . . I came on this expedition, as I felt certain none of

us would ever get back alive. As you see, I was right!"

Dickens stopped walking and gazed into the dying fire. There was an interval of silence during which nothing stirred. Then a thought seemed to strike him.

"But if—" he began. "Well, it is just possible that a rescue party may reach us from the earth. I am certain it won't, but it is conceivable. In that case, and if anything were to—happen to me, I feel sure I can rely on those present not to—er—betray me?"

Guidance stepped forward, as if rousing himself from a dream.

"Stop!" he cried. "Good God, have we all gone mad?"

"Mad!" repeated a deep voice, with a curious intonation. Dr. Nacht had risen to his feet and was confronting the leader.

"Have you any conception, Mr. Guidance, of the true reason why *I* came on this trip?"

The leader stepped back, bewildered.

"Mr. Guidance, I have hidden it so far, but I must tell you that, at times, I am not responsible for my actions. Indeed, I may go so far as to admit that, before I could join the expedition, I had to escape from—a certain place. As a matter of fact, I suffer occasionally from acute—de-rangements."

Nacht made a significant pause.

Everyone thought of his unpardonable behaviour in causing the disappearance of the soarer.

"It was during one of these attacks that I applied for a berth on the *Soaring Rocket No. III*. Indeed, I find it hard to believe that anyone in his right senses would come on such a mad trip. I might add that I do not come from Frankfort-on-the-Oder, but Brunswick."

Hesker, the Czech, burst into laughter.

"Well," he said, "since confidences seem to be in the air, how about this one?"

He fumbled among the bandages about his neck and soon produced a small cloth bag. Opening this, he took from it what appeared to be a singularly beautiful necklace, and held it up in his hand.

"See this?" he exclaimed. "It is the

necklace of the Gräfin von Freiburg! What do you think of that? Do you know who I am, Mr. Guidance? I am Jonathan Gorstein, the famous jewel-robber, and I came on this trip in order to evade justice, till this affair blows over. Thieves can be amateur astronomers as well as anyone else, you know."

● Sensation no longer affected Guidance.

He turned an ironical manner to the pilot.

"Well, Mr. Gystak, you haven't favoured us with *your* particular reason for coming!"

Gystak blushed, but said nothing.

So this was the miserable end of his expedition? He thought he had found a worthy crew, worthy of the great scientific adventure of the flight to Arion, and this was what their real natures were!

Grindin had come by accident, because he was drunk at the time; Ilse had come because she wished to "hook" Grindin; Smith and Dickens had come, the one to commit suicide, the other because he was certain he would never return; Gwilym Thomas had murder in his heart; Gystak, because he was paid by his paper; Nacht, because he was mad; Hesker, to evade justice; and Hergesheimer, to steal the designs of Lieben's engine.

What a collection of scientific enthusiasts!

Guidance felt that all his manhood and dignity was falling from him, that he was being humbled and made ridiculous. He felt that he would never again be surprised at anything.

"Dickens is the most sordid," he thought bitterly, "flying to Arion merely to allow his wife to collect the insurance money!"

But there was one to whom he could turn with a firm certainty, upon whom he could depend as on a rock—one, of whose scientific enthusiasm there could be no doubt, the only man remaining whom he could regard as a fit companion—Herr Oberingenieur Lieben!

On an impulse, Guidance left the low-flickering fire and walked to the corner of the clearing where Otto Lieben and his

daughter were talking in low tones, as yet unaware of anything unusual.

"Excuse me," he said with a certain eagerness, "will you pardon me if I ask you a rather intimate question, Herr Lieben?"

The engineer raised his head and made a gesture of assent.

"Tell me this, Herr Lieben—if you do not think the question impudent—can you give me the exact reason why you wished to accompany this expedition to Arion?"

"Do you want me to answer frankly, Mr. Guidance?"

"If, for any cause, you are unable to give a frank answer, I would rather you did not answer at all."

"Well, to speak the truth, this is why I was so keen on coming: You see, when I put my new fuel into its final form, I was not entirely satisfied with it. I felt certain I could do even better; but I had not sufficient experimental data; I hadn't had time for that. Now, if I came on this flight, I should have plenty of opportunity to observe my fuel under actual working conditions. I should be able to see, perhaps, just how the fuel should be improved, and so I would get a bigger price for my labours. Believe me, I want all the money I can get. My daughter and I have suffered long enough upon a miserable small salary. Ah, Mr. Guidance, you should see the countless, the endless, notes and observations and measurements I have made during the trip! But I forgot. Alas, my new engine, my fuel, my notes, are all burnt to cinders now!"

Guidance turned away.

Lieben after money! The man who had made the very life-blood of the soarer!

Alone, he sat down on the bare ground with his back against a tree. His mind was peculiarly lucid, but he felt that he had lost all his emotions.

So there was no one whatever left now, he thought bitterly. He even began to doubt his own fidelity to science and tried to analyse his thoughts and motives.

Suddenly, in a flash, it came to him how absurd was this talk of scientific progress,

how empty and futile the "nobility" of scientific purpose and endeavour. What was the use of this flight to Arion? Even if they had got back safely to earth, the most they would have accomplished would be to learn a few material marvels from the Arionians. In the end, what would it mean—to shoot yourself through the skies at a kilometre an hour faster than man has ever done before, to hear a voice across the world louder and clearer than man had ever heard before, to destroy, with a war-weapon, a larger number of soldiers, at less expense—what was the point of all this?

He realized the insignificance of all physical science, except insofar as it helped to make human beings a little happier, amuse or enlighten them, or satisfy the spirit of curiosity or adventure.

He realized the vanity of abstract scientific ideals, the squabbling after facts, merely because they were facts, the belief in the necessity of increasing mechanical efficiency. He realized the idiocy of this glorification of curiosity, reverenced as science—with a capital "S."

In a moment, he ceased to regard Lieben as an engineer, Grindin as a geologist, Hergesheimer, Dickens, Hesker, as astronomers, Nacht, a doctor, Gystak, a journalist, Smith, a surgeon, but all as human men. It seemed that it had just occurred to him that each one of these was that most wonderful of remarkable things, a human individual, with free-will and a brain. He felt somehow that he had just got to know them.

He wondered how it was he had never realized before that human personality was the only thing of fundamental importance.

CHAPTER XVII

The Amazing Solution

- About half an hour later, Guidance began to recover his control over himself, and felt his old scientific curiosity returning to him. Disaster was so utterly complete that he had nearly stopped worrying about their fate, since hope seemed

useless. He saw that the group around the fire had broken up, and also that *Monsieur* Grindin and Ilse appeared to have been busy.

They came up to him with fat notebooks in their hands.

"Monday has been giving us some very thorough lessons in Aronian," said *Fräulein* Lieben, "and we feel we can tackle anything together. We thought you might like to draw up a list of questions to ask the Arionians. It would be a pleasure for us; you've no idea how fascinating their symbols are when they became *wohlbekannt*."

"Certainly," said Guidance, and he began to think.

Soon he had compiled a formidable list of questions for poor Monday to answer, then Grindin and Miss Lieben took them and set to work. Guidance could not keep down his impatience, but went to them frequently to ask how they were getting on.

At first they appeared to be having some trouble in getting Monday to understand what they wanted, but when at last they started, they proceeded rapidly.

Guidance paced to and fro with nervous strides. What strange unearthly knowledge would be disclosed?—what incredible solutions to incredible mysteries, what dazzling glimpses of Aronian inspiration and invention? The levitation made it clear that they had control over gravitation. Was this secret to be revealed, and were they to learn the nature of the paralysing ray? Perhaps also they had sounded mystical depths and had the key to philosophical paradoxes? There was no reason why this branch of knowledge should not be advanced, as well as others. They might even understand the Secret of the Purpose of the Universe.

He watched them writing their symbols with growing excitement. What was the substance of those replies? So far as he was concerned, it might be anything, though he thought he had a faint glimmering of what it might be.

At last they had it all taken down, and some translated, but they were too tired

to do more that day. Guidance fumed and his mind became a blur with anticipation. He found it difficult to get to sleep that night.

In the morning, the translators seemed to be startled over something, and they had another long consultation with Monday, as if to confirm their work.

Then, two hours after breakfast, they came to Guidance in a state of indescribable excitement, and handed him the replies without saying a word. He glanced at them and dropped the paper in his utter amazement. Then he sat down and read slowly and intently. He could not restrain an impulse to leap into the air.

Finally he gathered together every surviving member of the expedition and read the replies aloud, in a voice that was hoarse and trembling with excitement.

"Miss Lieben's questions," he said, "were put at my suggestion. She has asked the Arionians a number of questions, and has written down the rough equivalents of the replies. I think you will find them sensational. Here they are:

"Where is the centre of Aronian civilization?

"There is no centre.

"What do the Arionians eat?

"The Arionians do not eat anything.

"At times we have experienced a complete loss of weight. By what means have you obtained control over gravity?

"The Arionians have not any control over gravity.

"How was it that, a few days ago, the whole vast mass of Mount Levitation became flat?

"Mount Levitation did not become flat.

"How did it come about that, in failing to collide with the earth, Arion disobeyed the laws of celestial mechanics?

"Arion did not disobey the laws of celestial mechanics.

"When is the rainy season in this part of Arion?

"There is no rainy season.

"In which direction lies the nearest sea or lake?

"There are no seas or lakes.

"How is it that Dr. Nacht, a short while ago, failed to find the sun?"

"There was no sun to find."

"How could it be that the planet Arion was never seen on earth before this juncture?"

"Arion is not a planet."

• Guidance paused, and a roar of laughter rose from the camp. He looked about him in surprise. Was it possible that he had no sense of humor? Soon, out of respect, the laughter died down, and the leader continued.

"Friends, listen to the next!" There was a curious earnestness in his voice which necessitated attention and which made everyone forget the embarrassing confessions of the previous night. "There follow a number of questions which Monday has grouped together, to be answered by one reply, such as 'What was the brilliant light we saw before plunging into Arion's atmosphere?' 'What is the purpose of the various metal structures we have seen?' 'What was the red illumination commented upon by Dr. Nacht?' and so on. Here is a brief summary of the reply, which I think you will agree is rather sensational.

"Much of our mystification has been due to the natural mistake of regarding Arion as an ordinary planet. It is, strictly speaking, not a planet at all, but a colossal soaring machine. I see that some of you are smiling incredulously. It is certainly rather large, but why should we measure size by our own achievements? There is no absolute scale in the matter. Once the technical difficulties are overcome, the advantages of such a vast soarer are obvious. Journeys can be made indefinitely, in perfect comfort and safety, with no leaks to worry about, and no collisions with cosmic rocks to fear, and ample room to stretch one's legs."

"If this is a soaring machine," said Dickens, sarcastically, "I should like to know on what planet it was built."

"It was not built on a planet," replied Guidance, unwittingly imitating the Arionian style, and there was another burst of

merriment. "In the direction of Betelgeuse, there is a large double star, invisible from the earth because it is cold. On one of these stars lives the Arionian race, and there they built 'the blue planet,' and put it off on its remarkable flight. Their knowledge and technical power is so vast that they must regard us as having no more intelligence than cattle. Surely great knowledge must bring with it sympathy and tolerance, for never once has any of them displayed a superior manner to us. By their way of acting, you would think we were their equals. This shows them in a highly creditable light."

"What is the object of this tremendous structure, then?"

"They are travelling on a visit to the inhabitants of another system, several hundred light-years away. They have been in radio communication with them for a considerable time. What we took to be loss or gain of weight was simply the effect of acceleration and deceleration. The fuel-gases emerge from cylinders sunk in the ground. They can twist the soarer round by tangential tubes. It was this which seemed to alter the slope of the plateau, and make Mount Levitation appear flat. Also, of course, it altered the length of the day."

"I ask you, does this look like a soaring machine? Look at those tumbled crags and disorderly forests."

"Nothing amiss in that. In their wisdom they may have planned it to be as natural as possible. They may even have a *flair* for the picturesque. It looks like it, judging by their quaint flying machines, which rarely exceed twenty-five miles an hour. After all, why have things practical and mathematical where it is not essential? Why have speed when you are not in a hurry? Again, their beasts of burden, the *Lämmchen* In any case, I understand that the soarer is not entirely artificial, but was once a satellite, which they hollowed out. So the scenery is quite likely the original."

"For the most part, the Arionians only come to the outside surface of the soarer occasionally. Mainly, they live inside.

When they feel like it, they go for a flight or a stroll among the mountains. They do not care for sailing, so there are no lakes. All this land is one mass of artificial irrigation; there are thousands of conduits under the forests. They like the air kept just saturated. The weather and even the lighting is under control."

• Dickens dropped his sarcasm and became enthusiastic.

"But, Mr. Guidance, this is a perfect world! No rain, no storms, everything arranged just as you please!"

"You are right there, Dickens. It is very much to be admired."

"How about the flash we saw, and the red light?" asked Nacht, raising himself on an elbow.

"They are wonderfully advanced in astronomy. They have an enormous telescope, sunk in the interior. There are two tubes at opposite sides of the globe—we have seen one of them—and two movable mirrors, supported above the blue mists, reflect light down them. It is nothing more nor less than a Michelson Stellar Interferometer, with a terrific aperture. With it, they can measure the diameters of almost any body in the heavens. They use infra-red light, which goes through the mist, but sometimes they clear the mist. Why the mist is there, I do not know. Perhaps they like blue daylight. The red light noticed by the doctor was probably the reflection from the mirror of some operation they were carrying out elsewhere. It could not have been the sun, because we are now millions of miles from the solar system."

"Have you found out how they eat?" asked Gystak anxiously. It seemed to be the only thing that intrigued the pilot.

"They can only take in nourishment as a liquid, and this they do by sucking fluid through tiny holes in the ends of their arms. For the use of those who get stranded in the forests, they have occasional stores of liquid foods, which look like trees with india-rubber twigs. They imbibe the food by fitting their arm-tips in the rubber tubes."

"Exquisite!" exclaimed Gystak, well satisfied.

"I suppose," said Dickens, thoughtfully, "that time I tried to steer my way by compass through the forest and wandered in a complete circle, it was due to machinery or iron just under me."

"A difficulty, Mr. Guidance," said one of the mechanics. "It must be an inconceivably small chance which places our solar system directly between the Aronian's home and their destination."

"Our system is not directly between their home and their destination," said the leader, without the faintest trace of a smile, and further titters were caused by this persistent outbreak of the Aronian style. "They visited our system out of curiosity, and they had to make a very wide detour in order to do it, but they were in no hurry."

"But, surely, if they went to all that trouble to visit our system, why didn't they arrive on the earth and inspect it? They were so close, they must have been able to see that it was inhabited."

A cloud of annoyance passed over the leader's face, and for a moment he did not reply. He seemed to ponder over his answer carefully, as if it were a very delicate thing to say.

At last he dropped his head, as if ashamed.

"The truth of the matter is—well, you must remember that they are far beyond us in mental development. It is certainly correct that, with the help of their huge telescopes, they found out what kind of people were living on the earth, long before they reached the nearest point. And—well, they did not think the earth worth visiting!"

Everyone was disconcerted by this, and nothing more was said. Guidance did not like the undignified statement he had made, and bit his lip.

Mr. Dickens broke the uncomfortable silence.

"A moment," he said. "If these gray people inhabit this globe right to its very centre, then its population—shall I say

the 'crew' of the soarer, must be very numerous?"

"It is numerous. Under our feet are toiling and living many millions of Arionians, but I have not got the exact figure, owing to difficulties in connection with the symbols."

"Ahem! May I presume to ask if you know what the population of the mother-star is? It must be colossal!"

"It cannot be conceived by us. Our ideas are far too limited."

"Does all this vast mass of living creatures exist together in harmony?"

"Apparently so, more or less."

"What feats of diplomacy must have been endured! What peaks of organization must have been reached!"

"Yet another proof of their sympathy and forbearance."

The members of the expedition lay down on their beds that night with their minds immersed in incredulous awe.

* * *

• After this friendly exchange of questions and answers, they were led on a tour through "the blue planet" by the Arionians. They were taken into innumerable galleries, deeper and deeper down, until they reached the very centre of the globe itself and lost all weight. They saw things whose meaning they could not grasp, nor ever hope to grasp, but Monday and the other gray creatures showed not the slightest contempt.

Meanwhile the Aronian engineers were fitting out a large soaring machine to take them back to earth; Arion was to slow down and wait for its return. It would have wasted enormous quantities of fuel to take them back on Arion itself. This machine was the one they would have used when landing on the earth; it had been put on one side when the Arionians had decided that it would only be a waste of time to visit a planet in such a primitive stage of development.

Several days before they were due to start the journey back to earth, the bewildered party of Terrestrians were conducted to the tremendous cavern, just be-

low the surface of the machine, where their hosts' soaring machine was stored.

Guidance, the engineer, and his daughter, Grindin, and Gystak, were shown through the wonderful soarer by Monday, while the rest preferred to stroll around the vast hall, and watched the treemen perform their complex jobs.

"Where on earth have they got the engines?" asked Lieben. "If they haven't put them in yet, where can there be room for them? I can't see any spare space. *Liebling*, will you ask Monday about it?"

"Right," said Ilse. "He says that the engines are there, father, at the end of this corridor. Here, in this room."

"*Herr Gott!* Mr. Guidance, do you see this? The engines, in this tiny space! They don't occupy one-tenth the space that the engines did in the *Soaring Rocket No. III!* A miracle of compactness! We've got a lot to learn, a whole lot to learn. *Ach*, will their fuel supersede my fuel, I wonder!"

"My word," exclaimed his daughter, "just come and have a glance at these marvellous windows."

The group hastened to examine one of the wonderful windows, and they gasped with astonishment. They were indeed as perfect as windows could be; the glass was so remarkably fashioned as to be invisible—there was no means of discovering its presence without actually touching it, or breathing upon it.

"This beats anything I've ever seen," said the leader, drunk with wonder.

"I say, look into this room!" continued the excited Ilse.

They went through the half-open door and saw that the walls were covered with black-and-white caricatures of Aronian treemen; in addition, in the very centre of one of the walls, there was an extraordinarily good black-and-white portrait of—Henry Guidance himself! Everything was there, massive frame and features, square jaw slightly exaggerated! It was so unexpected that they could not help bursting into laughter—even the dignified leader himself was amused at his own likeness, despite the skilful caricature.

Symbolically, below the feet of Guidance, there was a rolling earth set in clouds.

"By the way, Ilschen," said the engineer, "I thought you told us that the Arionians don't appreciate flat diagrams."

"Yes, that's so, but I was asking scientific questions. They certainly seem to appreciate flatness so far as it applies to art. Now isn't that drawing cute?"

"It seems clear," whispered Gystak to Grindin, peering closely at the caricature, "that these Arionians have a well-developed sense of humour."

"I'll say they have! Look at that magnificent chin! It's the very expression of Guidance's soul—if he has one!"

When they had finished the interesting inspection, and the entire party was descending in a big lift to the rooms assigned to them, the gloomy surgeon from the Isle of Wight, Alfred Smith, drew the leader aside and whispered to him.

"Do you remember all that rubbish I said, Mr. Guidance, about coming on this trip to do away with myself? Well, I'm very glad to say that's all over now—I'm completely cured! Man, the things we've seen! Who would want to die after seeing such wonders as these?"

Guidance looked at Smith closely. There was indeed a new freshness in his eyes, and his expression had changed to that of a youthful man. His voice was trembling with enthusiasm—a convert to optimism, by Arionian magic!

"That's just fine."

Smith moved away without adding another word, his face beaming. As they were stepping out of the lift, Ilse Lieben shouted over her shoulder: "Oh, Mr. Guidance, Monday wants us to go to a cinema tomorrow morning!"

"What's that? A cinema, did you say?"

"Yes, we have to see some kind of show, a moving film or something—I don't quite know what."

"Well, what next!"

They waited for the next morning's entertainment with as much patience as they could, helped considerably by a visit to an amusing kind of theatre, where a group of treemen performed on the stretched

skin of a slain *Doppel-Lämmchen*, stamping with their three feet, spinning around and twisting themselves.

● When at last the time came for the cinema show, or whatever it was, Monday conducted them through a maze of lifts and other devices of transportation, and they entered a very large and brightly lit hall where several thousand treemen were assembled. They were all standing up and facing a blank screen a hundred metres wide. They were going to witness a moving-film, without a doubt.

Guidance had been in cinemas where the projector was in front of the screen, in others where it was behind the screen; but here it appeared that both sides of the screen were utilised simultaneously. It was rather an ingenious arrangement. The hall was in two halves, the screen placed between them, and thus although the capacity of the place was enormous, no spectator was very far from the screen.

"Who stars in the feature-film?" asked Ilse flippantly.

But she, and the rest of the Terrestrians, were startled into silence when the lights were extinguished suddenly and the performance began. The theatre was filled with an ear-splitting roar, and a vivid scene, terrifying in its reality, covered the whole of the immense screen.

The screen was so big that they could not attend to every part of it at the same time, and this increased the feeling of reality.

It appeared to be a night-scene, and it was utterly unfamiliar and fantastic. The horizon was lit by an almost continuous glare, and at intervals everything was erased by a dazzling explosion of light. Peals of sound like thunder echoed from the lofty roof, and the air was filled with intense whinnings and screamings.

In the middle distance, there was a large mound of earth, or a hill; abruptly this burst into scattering fragments, and there was nothing left. A line of dim, mysterious figures appeared among the smoke from nowhere, and moved forward hesitatingly. A single dim figure stood upon a

hillock to the left. From this figure there blazed a long jet of white-hot flame, two hundred metres long, directed towards the advancing line.

The advancing line was destroyed, and on the ground were charred writhing fragments of—human beings!

Ilse screamed and had to turn her eyes away.

It became increasingly clear that this was a battle between men of earth.

Presently they saw a town tumble to ruins, all the inhabitants being buried in the bricks.

"*Herr Gott,*" exclaimed Lieben, "no wonder the Arionians did not care to visit the earth!"

Among the piled débris and swirling smoke and dust, Guidance caught a glimpse of a Chinese placard. At once he realised what they were seeing; it was the Russo-Chinese war, which had broken out a day or two before the *Soaring Rocket No. III* left Templehof Aerodrome. The trouble had originated in Blagovyschensk, and fighting had begun for possession of the Amur territory. So they were witnessing the frightful warfare of the tenth decade.

The scene vanished and the roof-lights were turned on.

The visitors blinked and gasped with relief.

What telescopic miracles had the tree-men used to produce these pictures of earth-life? They were puzzled, as well as horrified, by the views of the Russo-Chinese war. Slowly their nerves recovered. Had the Arionians made this film by a scientific technique they could not even guess at?

"What a lot of things they know," commented Guidance. "What a lot of things we *don't* know!"

The lights went out again, and pictorial life flowed once more over the screen.

But this time, to their intense relief, they saw no battlefields or war-clouds, but a great plain, with sea in the distance, and heavy rain falling upon a beautiful city.

"It's Berlin," exclaimed Guidance suddenly.

A large number of people assembled in a wide flat field, recognised instantly as the Tempelhof Aerodrome. In the centre of the picture, a soaring machine taxied along the ground, pursued by seven policemen. Without a doubt, it was the *Soaring Rocket No. III*! The interested spectators watched their ship circle upwards into the air and heard the roar of the first explosion which hurled it out of the earth's atmosphere. The view faded, and a moment later they saw the dangerous landing on Arion, and the slight accident which damaged the machine.

"So," thought Guidance with amazement, "they knew all about our coming beforehand. But how they got these shots beats me!"

Guidance had suspected that the tree-men saw and heard in some manner psychical rather than physiological, and that possibility again occurred to him. For this display had an altogether different quality from a cinema show on earth. It not only looked a true facsimile of the reality, but it looked far more real than the reality would have looked. It was not only sight and sound, but something else as well, a gripping sense of actuality.

After the landing, they were shown all the adventures and incidents which were so fresh in their memories. It seemed almost like an externalisation of their memories.

Towards the end of the performance, a tense whining was heard, and they perceived the soarer spinning out of the blue clouds. It was the *Soaring Rocket No. III* on its last flight!

Guidance stirred uneasily. Was he going to witness again the end of his ship?

The soarer recovered from the spin, then proceeded to the plateau to effect a landing, followed by two of the Arionian flying machines. The pilot attempted to land, failed and circled around again. Guidance could not take his eyes from the screen. The second time around, the soarer flattened out too soon, hovered for an awful second, then stalled and hit the ground. Instantly the machine was devoured in flames!

Guidance clenched his fists. It was too real, too real.

- On the day before they were due to depart from the blue planet, a most unfortunate incident occurred. Alfred Smith went to the surface alone and thought he would enjoy the open air for a few minutes in one of the forest clearings.

When he did not return after an hour or so, they went out to see what had become of him. After some searching around the clearing, they stumbled upon his body in the undergrowth. He had been killed by a stampeding *Doppel-Lämmchen*. . . .

"There seems to be something ironic in the very air of Arion," Guidance decided when he had recovered from his dismay. "Just after he had announced himself as cured of his suicidal tendencies, one of those clumsy beasts must needs come along and trample on him."

It was ironic in another way also, to kill off a passenger when all their trials and desperations were over.

- On the return journey back to their native earth, which they had given up all hope of ever seeing again, Guidance was talking with Herr Lieben in a room at the front of the Arionian soaring machine.

"You know," he said to the engineer,

"I think we ought to forgive Mr. Hergesheimer for trying to steal your engine designs . . . he has been an immense help on this trip, and after all, we are comrades in adventure now. Hesker too. Don't you think we should ignore the fact that he is Jonathan Gorstein? He has been so valuable, and we all know him so intimately."

Henry Guidance was ruined financially by the destruction of his *Soaring Rocket No. III*; to alter this awkward situation, he had decided to stoop to blackmail, and his victims were to be Hergesheimer and Jonathan Gorstein. Naturally, they would be of no use to him if they were jailed, hence his wish to keep their crimes secret.

The engineer was puzzled at his leader's request; he believed in strict justice; moreover, he was still greatly indignant at the attempted theft of his plans. But Guidance had paid him a large sum of money for his services, and he did not like to go against his wishes.

With a worried frown, he made a gesture of reluctant assent.

At that moment, without any warning, a shot suddenly resounded through every part of the vessel.

Guidance jumped to his feet.

"What the dickens—"

"You said it!" exclaimed Gystak, as he appeared in the doorway. "Mrs. Dickens is going to get her insurance money!"

THE END

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ISLE OF THE GARGOYLES

By William Lemkin, Ph.D.

(Continued from page 853)

through much, and I was still a very sick man. Absolute rest was essential.

I closed my eyes and seemed to behold a vision. I seemed to see Dr. Stannard and his little companion entering the bailiwick of the cretins. I seemed to see

the two being welcomed back to the fold as though they had wandered afar and were now returning to their natural habitat. And in this altered light, the entire episode appeared to me to lose some of its deeply poignant tragedy.

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Science Questions and Answers



THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

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Luminol in Cold Light

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have one question to submit to "Science Questions and Answers." I have details of a method of masking "cold light," but require a chemical called "Luminol." What is "Luminol," and how can it be prepared?

DOUGLAS W. F. MAYER,
Leeds, England.

("Luminol" is a drug taken from another drug known as "barbital," a heart-depressant extracted from coal-tar. Physicians use it in performing operations where there is ordinarily much bleeding. The slowing down of the heart action prevents too much loss of blood. You should be able to secure "Luminol" with a prescription from your doctor, at any chemist's or drug-store.—Editor.)

in the vicinity. The reason that there was no shadow at all for the space-time ship on the cover—March, 1935 issue—is that it was not large enough to cast one under any circumstances in space. The other bodies, you will note, have diameters of thousands of miles. Due to a printer's error, the blue background of the cover was much lighter than Paul painted it and accentuated these shadows to an unscientific degree.

We could not draw you a correct picture of an atom, for the simple reason that no one knows just what atoms look like. The most modern theories propound that they are made of positive and negative charges of electricity, and that would be a very difficult thing to put in black and white. In the old, old days, atoms were marbles that could be rolled around and sorted. That was before the electron and proton theories.—EDITOR.)

Helium and Blood

Editor, SCIENCE QUESTIONS AND ANSWERS:

If you can answer these questions, I shall look forward to them in a forthcoming issue.

How much helium would it take to suspend a weight of 160 pounds in mid-air fifteen feet high? How long would it last? How many hours would that much helium hold up 160 lbs. of human weight?

If one could not eat and could be given blood through a vein, good rich blood, how long could one live that way?

If every human were overhauled every five years, completely, might we not do away with decrepit old age?

DIANE HUNTER,
Washington, D. C.

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have awaited several months to see if any questions would be brought up about Paul's cover. I don't want to try to explain why I think the shadows on the moon and Earth cast dark streaks through space. Would you please explain technically why it should, or shouldn't?

Also, if possible, can you print a picture of an atom? There was a picture in the New York Times of, I believe, an atom.

WINTON HOWARD, III,
Gonzales, Tex.

Celestial bodies cast shadows in space, but it is a question as to whether you could perceive them with the naked eye. The shadows would be the blocking off of light between the body and the small particles of matter in "empty" space. The quality of the shadow would depend upon the quantity of matter

(Helium displaces approximately eight pounds of air. In a flexible container, the helium would expand as it rises higher and higher, because the air thins out and the helium has to take up more room to displace eight pounds of it per pound. This means that helium will

support seven pounds, human weight or otherwise, per pound of the gas. Therefore, it would take about twenty-three pounds of helium to carry 160 pounds of weight. You must figure the weight of the container in this also. This lifting power holds good at sea-level or otherwise. However, due to the fact that the helium cannot expand as much as it would like to in a rigid container, ballast has to be dropped off due to the decrease of lifting power. The only substance lighter than helium is hydrogen, and it is the only medium in which helium will sink instead of rise. There is no limit to the time that helium will support weight. It does not lose its powers. This, of course, provides that the container be air-tight.

Theoretically, one could live an indefinite period without eating, but having fresh blood pumped into his veins constantly. However, the collapse of his digestive system from disease would most likely cause him some real trouble.

Your last question cannot be given an accurate answer because no one knows just what causes old age, and we do not know what you mean by an "overhauling."—EDITOR.

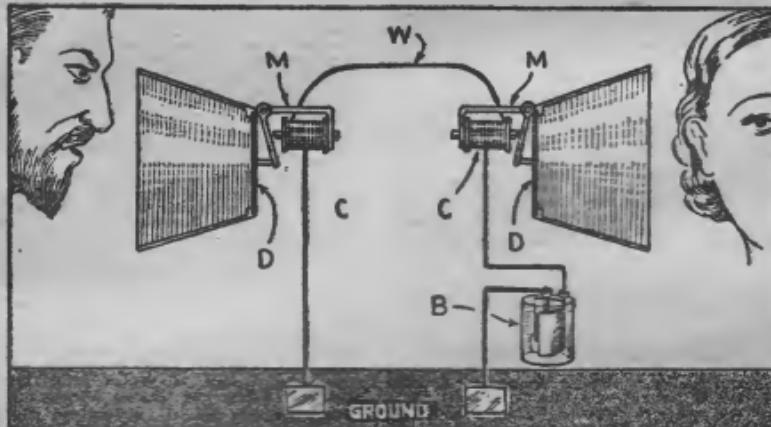
The Telephone

Editor, SCIENCE QUESTIONS AND ANSWERS:

Could you give me a very simple explanation as to how the telephone works? As sound travels only about 1100 feet per second, I don't see how people could call up London from New York and receive an answer without waiting an awfully long time, it being about 4,000 miles between these points. There would be the same trouble from New York to the west coast, if it was the sound that travelled over the wires. If the sound does not do the travelling, it must be something faster. What is it? A diagram might help out to illustrate this for me.

I would appreciate any effort you will make in your interesting department of science to clear up these points.

SYLVAN MINSKER,
Brooklyn, L. L. N. Y.



You will find a simple drawing on this page showing the principle of the telephone. It is impractical, of course, to have sound travelling over the phone wires, although this can be done, with unavoidable dissipation of the sound waves. In 1876, Alexander Graham Bell found a means of transmitting sounds by electricity. In the illustration, D is the vibrating diaphragm that you talk to. These vibrations start currents in the coil, C, by electro-magnetic induction, which changes the sound waves into electrical impulses of varying intensities, dependent upon the sound uttered. These vibrations speed along the wires at the natural speed of electricity, which is practically instantaneous at any distance, and, when they are received at the other end of the wire, W, the magnet, M, comes into use again, in changing the electrical impulses into sound vibrations, and the process has been reversed. In the modern telephone, the transmitter is a bit changed from Bell's original, so that it produces much stronger vibrations to account

for the loss it undergoes passing through the wires. This new transmitter is called the "carbon microphone" and contains a diaphragm of mica.—EDITOR.)

The Fourth Dimension

Editor, SCIENCE QUESTIONS AND ANSWERS:

Is there any electrical proof of the fourth dimension? If so, please explain them. Also, is there any relation between "hyperspace" and Einstein's fourth dimension?

JAMES M. ROGERS,
Muskogee, Okla.

(There is no proof, electrical or otherwise, of the existence of the fourth dimension, but we find many interesting theories on the subject. We figure that if a plane at right angles forms a cube, then a cube at right angles must form some four-dimensional object, which we term a tesseract. There are three popular theories about the fourth dimension. The tesseract is one, Einstein's—in which he calls it time—in another, and the third states that the fourth dimension is another world, co-existent with ours, but imperceptible because objects of that world vibrate at an altogether different set of vibrations, much as you cannot see the spokes of a wheel that is spinning very fast.

In Einstein's time theory, it is prepared that it takes four dimensions to locate an object—length, breadth, thickness [or width] and the time at which it exists.—EDITOR.)

Our Sun, Nodes, and Ionization

Editor, SCIENCE QUESTIONS AND ANSWERS:

Will you please answer the following in the Science Questions and Answers department?

(1) What is the name of the constellation of our own sun? Is it Leo?
(2) What is meant exactly by (a) nodes; (b) ionization?

R. A. CASE,
Hull, England

(1) Our own sun is not really in any constellation. A constellation is made up of a group of stars that have no relation whatever to each other; their distance from our sun or each other does not figure in, but only their appearance to the naked eye as seen from the earth. They are used chiefly to make it easier to learn the star-maps and the movements of the hemispheres. In December, the sun appears amidst the constellation of Scorpio, and after the twenty-third of the month, we find it among the stars making up Sagittarius, although the sun itself is a part of no constellation.

(2) A planet's node is the point where its orbit crosses that of the earth—when it crosses the plane of the Ecliptic, in which the earth revolves. The air becomes ionized when some of the electrons are knocked off the atoms of the air, usually by some electrical or magnetic discharge. When the electrons leave the atoms, the ion (moving particle) becomes positively charged.—EDITOR.)



The SCIENCE FICTION LEAGUE

—a department conducted for members of the international SCIENCE FICTION LEAGUE in the interest of science-fiction and its promotion. We urge members to contribute any items of interest that they believe will be of value to the organization.

EXECUTIVE DIRECTORS:

FORREST J. ACKERMAN
LANDO BINDER
JACK DARROW
EDMOND HAMILTON
DAVID H. KELLER, M. D.
P. SCHUYLER MILLER
CLARK ASHTON SMITH
R. F. STARK
HUGO GERNSEY,
Executive Secretary
CHARLES D. HORNE,
Assistant Secretary

THERE are more than eleven hundred members in THE LEAGUE, as this is being written, and thirty-one organized Chapters in this country and abroad with dozens of others in the making all over the world. Member Number Eleven Hundred is Alfred Toser of Skelton, W. Va. He has been awarded a free subscription to *WONDERS* Stories, as per our announcement for each member whose number falls on the hundred mark. Those who fall on the thousandth number win a complete line of SCIENCE FICTION LEAGUE essentials worth several dollars in addition to the subscription. An application blank for members who have not yet joined will be found in another part of the magazine.

THE RIDGEWOOD CHAPTER

This is to announce that on August 26, 1935, the Ridgewood SCIENCE FICTION LEAGUE (of Queens County), Chapter Number Twenty-Eight, was formed and organized by Nelson H. Hohenstein, the Director, and given Charter. Charter members include the following (member number follows name): Charles Kuhn (1060), Martin Conrad (1061), and Nelson H. Hohenstein (250).

Due to the fact that Brooklyn already has its permitted quota of two Chapters, the Ridgewood branch has been Chartered in Queens, the first in that borough of New York City. Ridgewood is half in Queens and half in Brooklyn, and although the post-mark reads Brooklyn, the Director really lives in Queens. This new Chapter is within easy reaching distance of Long Island City, Jamaica, Glendale, and many other sections of the Queens district. The first official meeting of the Ridgewood Chapter was scheduled for October, and the Director intends to procure a public school room for this first meeting.

Queens members of the LEAGUE can join this local branch by writing to the Director, Nelson H. Hohenstein, RIDGEWOOD SCIENCE FICTION LEAGUE, 69-47 Palmetto St., Brooklyn, N. Y.

THE NASSAU CHAPTER

This is to announce that on September 10, 1935, the NASSAU SCIENCE FICTION LEAGUE, Chapter Number Twenty-Nine, was formed and organized by Alan J. Aisenstein, the Director, and given Charter. Charter members include the following (member number follows name): William Aisenstein (1073), Minka Blum (1088), and Alan J. Hohenstein (998).

The first meeting of this Chapter was scheduled to take place upon the receipt of the Charter, which was sent immediately upon application.

Members of the LEAGUE in Nassau county can become affiliated with this Chapter by addressing the Director, Alan J. Aisenstein, NASSAU SCIENCE FICTION LEAGUE, 891 Academy Rd., Woodmere, Long Island, N. Y.

THE BECKLEY CHAPTER

This is to announce that on September 17, 1935, the BECKLEY SCIENCE FICTION LEAGUE, Chapter Number Thirty, was formed and organized by Morris Higginbotham, Jr., the Director, and given Charter. Charter members include the following (member num-

ber follows name): David Abrams (1086), Moe Saks (1085), and Morris Higginbotham, Jr. (995).

The early meetings of this new Chapter will take place in the home of David Abrams of Beckley. The members plan an extensive campaign to spread science-fiction and they intend to introduce Esperanto into the local high school, with the full co-operation of the language teachers. The Director has in preparation an editorial expounding the merits of science-fiction and the SCIENCE FICTION LEAGUE, to be published soon, and he would like the local branch to be known as the Mountaineer Chapter, to symbolize the mountain city of Beckley.

Our members in and around Beckley will be glad to join this circle of science-fiction enthusiasts, and can do so by addressing Morris Higginbotham, Jr., Director, BECKLEY SCIENCE FICTION LEAGUE, P. O. Box 64, Beckley, W. Va.

THE MUSKOGEE CHAPTER

This is to announce that on September 26, 1935, the MUSKOGEE SCIENCE FICTION LEAGUE, Chapter Number Thirty-One, was formed and organized by Francis Stewart, Jr., the Director, and given Charter. Charter members include the following (member number follows name): James M. Rogers (618), Douglass M. Stewart (1102), and Francis Stewart, Jr. (382).

Our Muskogee district members can join the local Chapter by sending their names to Francis Stewart, Jr., Director, MUSKOGEE SCIENCE FICTION LEAGUE, 551 N. 13th St., Muskogee, Okla.

FOREIGN CHAPTERS

LEEDS SCIENCE FICTION LEAGUE (Chapter No. 17). Director, Douglas W. F. Mayor, 20 Hollin Park Rd., Roundhay, Leeds 8, Yorkshire, England.

BELFAST SCIENCE FICTION LEAGUE (Chapter No. 20). Director, Hugh C. Carswell, 6 Selina St., Belfast, Northern Ireland.

NUNNATON SCIENCE FICTION LEAGUE (Chapter No. 22). Director, M. K. Hanson, c/o Mrs. Brice, Main Rd., Narborough, Leicestershire, England.

SYDNEY SCIENCE FICTION LEAGUE (Chapter No. 27). Director, W. J. J. Oland, 26 Union St., Paddington, Sydney, N. S. W., Australia.

OTHER CHAPTERS

There are domestic Chapters of the LEAGUE, fully organized with regular meetings, in the following cities. Addresses will be furnished by Headquarters upon request to members who would like to join some local branch. Chapters are listed chronologically according to Charter:

Brooklyn, N. Y.; Lewiston, Ida.; Erie, Pa.; Los Angeles, Calif.; Monticello, N. Y.; Mayfield, Pa.; Lebanon, Pa.; Jersey City, N. J.; Lincoln, Neb.; New York, N. Y.; Philadelphia, Pa.; Oakland, Calif.; Elizabeth, N. J.; Chicago, Ill.; Tacoma, Wash.; Austin, Tex.; Millheim, Pa.; Bloomington, Ill.; Newark, N. J.; Stamford, Conn.; Denver, Colo.; and Lakewood, Calif.

PROPOSED CHAPTERS

Every member of the LEAGUE who possibly can should belong to some Chapter—one of those listed in the above sections or in the list to follow. If there is not a Chapter located near you, you can start one yourself. Simply write in to Headquarters and we will send you complete information. To join one of the Chapters mentioned here, just ask us for the complete address of the one you are interested in and we will put you in touch with the local Director. We have active members in the following cities who would like to organize Chapters. Cities listed alphabetically—

Akron, O.; Albany, N. Y.; Bacolod, P. I.; Bakersfield, Calif.; Baltimore, Md.; Belleville, N. J.; Belmont, Mass.; Bessemer, Ala.; Bethlehem, Pa.; Boston, Mass.; Bronx, N. Y.; Buffalo, N. Y.; Caldwell, Ida.; Cape Town, South Africa; Christchurch, New Zealand; Clarion, Pa.; Danville, Ia.; Des Moines, Ia.; E. St. Louis, Ill.; Elmira, N. Y.; Far Rockaway, N. Y.; Flint, Mich.; Hammond, Ind.; Hayes, England; Honolulu, T. H.; Houston, Tex.; Hull, England; Indianapolis, Ind.; Johnson City, Tenn.; Johnstown, Pa.; Kenmore, N. Y.; Lawrence, Kan.; Liverpool, England; Lockport, N. Y.; London, England; Lovell, Wyo.; Mancelona, Mich.; Mason City, Ia.; Mercedes, Tex.; Milwaukee, Wis.; Minneapolis, Minn.; Moline, Ill.; Oklahoma City, Okla.; Peoria, Ill.; Quincy, Mass.; Rockdale, Tex.; Sacramento, Calif.; St. Louis, Mo.; San Diego, Calif.; San Francisco, Calif.; San Mateo, Calif.; Seattle, Wash.; Shanghai, China; Southall, England; South Amboy, N. J.; Springfield, Mo.; Staten Island, N. Y.; Warren, Wyo.; Washington, D. C.; Wellington, New Zealand; Wichita, Kan.; Wilmington, Del.; and Yonkers, N. Y.

CORRESPONDENCE

All members are free to use this column with a limit of six insertions per year per member. Members are warned against questionable mail that their insertions may bring in from outsiders.

Leslie Flood, 14 Annes Rd., South Hackney, London E. 9, England—wants to correspond with a reader in England, preferably London, who is interested in and collects science-fiction.

Ralph E. Lange, East Aurora, N. Y.—would like to become acquainted with other members of the LEAGUE. No age or location limits.

Harman Leventman, 145 Fountain Ave., Brooklyn, N. Y.—all fans, age and locality unlimited, interested in any branch of science.

Maurice K. Hanson, c/o Mrs. Brice, Main Road, Narborough, Leicestershire, England—girl members between the ages of 18 and 19, living in any country.

Joe Brugman, 3094 Forty-Second St. N. E., Seattle, Wash.—wants correspondents of high school age. He is interested in radio. No sex or location restrictions.

Daniel Ryan, 3164 Bainbridge Ave., New York City, N. Y.—members of the LEAGUE about his own age, fourteen.

H. E. Atcheson, 72 Farningham Rd., Caterham, Surrey, England—any English reader. He will do his best to answer all letters.

W. Paul Jackson, R. F. D. No. 1, Magadore, O.—members interested in botany, bacteriology, and other natural sciences.

Alan J. Aisenstein, 891 Academy Rd., Woodmere, L. I., N. Y.—all science-fiction enthusiasts in Woodmere, Hewlett, Inwood, Cedarhurst, and Lawrence.

C. E. Hess, 816 Media St., Bethlehem, Pa.—will proportionately award each whose plans or theses contribute Efficient, Simple design, to either Teaching or Practice of authentic physio-therapy or therapists, co-operation. He values utility, not neatness, of plans.

Henry A. Jacobs, 38 Midhurst Ave., Croydon, Surrey, England—all members in and around Croydon who would like to join a local Chapter, though Mr. Jacobs doesn't want to be the Director himself.

Paul K. Chapple, Ashland, Wisconsin—author of "The Growth Promoter" and "Black World" would like to correspond with any members interested in writing science-fiction.

Francis Stewart, 531 N. 18th St., Muskogee, Okla.—anyone interested in securing equality for male citizens of these United States.

James M. Rogers, 1216 W. Broadway, Muskogee, Okla.—readers in and around Muskogee who would like to join the local Chapter.

THE THIRD SCIENCE FICTION TEST

To be taken by members of the SCIENCE FICTION LEAGUE who wish to secure their First Class Memberships. The First and Second Tests, printed in our January and July, 1935 issues, respectively, brought forth seventy-three First Class Members. Similar tests to this will be sponsored in every January issue of WONDER STORIES. Seventy per cent is passing.

Papers must be typewritten or written in legible handwriting or printing and must contain the questions as well as the answers to each section. All papers submitted after January 21, 1936, will be invalid. This test will not be repeated in future issues. A new test will appear in the January, 1937 issue for new members. All problems should be answered from memory and we depend upon the honesty of members not to do any research or consult other members while taking the test. Each test must be done independently. Send all papers to The Science Fiction Test Judges, o/o The SCIENCE FICTION LEAGUE, 99 Hudson St., New York City, N. Y. Members in foreign countries, not on the North American Continent, are given until February 21, 1936, to complete the test. If you are not a member, but would like to take this test, send in your application to us with the test.

PART ONE:

General Quiz on Science Fiction .25 at 1/2%. 12 1/2%

PART TWO:

Multiplechoice 25 at 1/2%. 12 1/2%

PART THREE:

Completion 25 at 1/2%. 12 1/2%

PART FOUR:

True and False 25 at 1/2%. 12 1/2%

PART FIVE:

Essays on Science Fiction 2 at 5%. 10%

PART SIX:

Personal Opinions 4 at 2 1/2%. 10%

PART SEVEN:

General Science 30 at 1%. 30%

100%

The results of this test will appear in our April, 1936 number.

PART ONE

General Quiz on Science Fiction

- What science-fiction magazine has changed format most often?
- Did Air Wonder Stories or Science Wonder Stories appear first?
- What science-fiction author has become famous through Tarzan?
- Who was the first editor of Astounding Stories?
- What editor was the first to give science-fiction a real "break"?
- What magazine printed nothing but reprints in its first issues?
- What was the sequel story of "Men With Wings" by Leslie F. Stone titled?
- What plot-idea is Edmond Hamilton most famous for?
- Is A. Merritt a weird or science-fiction author?
- What did Harold Hershay attempt in the science-fiction field?
- Is there any world-wide society for science-fiction fans?
- Name the star-artist for each science-fiction magazine.
- Has England made any science-fiction movies?
- How old will science-fiction, in magazine form, be in April, 1936?
- Give the single-issue prices of the three stf. magazines.
- Which magazine put out a Canadian edition?

17. What was "Scoops"?
18. What famous science-fiction fan is spreading Esperanto?
19. What other type of story besides science-fiction does "Fantasy" include?
20. Where is the most active Chapter of the SCIENCE FICTION LEAGUE located?
21. Do any science-fiction fans live in Australia?
22. Name a famous novel of Ray Cummings.
23. Who are the secretaries of the SCIENCE FICTION LEAGUE?
24. What publication is George Gordon Clark connected with?
25. Give your definition of "Utopia."

PART TWO

Multiplechoice

1. Science-fiction is: (1) terrifying (2) educational (3) funny (4) dry.
2. Wonder Stories is looking for: (1) hackneyed stories (2) famous authors (3) tales of the moon (4) new ideas.
3. Astounding Stories is owned by: (1) Street and Smith (2) Tech Publications (3) Clayton (4) Cromwell Publishing Company.
4. Science-fiction has never appeared in: (1) newspapers (2) congressional records (3) motion pictures (4) slick magazines.
5. An author who has been acknowledged an excellent science-fiction humorist is: (1) Williamson (2) Campbell (3) Weinbaum (4) Verrill.
6. The correct abbreviation for "science-fiction" is: (1) sfn. (2) scfic. (3) stn. (4) sf.
7. A scientific-fiction object is: (1) werewolf (2) foot-ball (3) space-ship (4) alarm clock.
8. Reading science-fiction will: (1) broaden your mind (2) improve your morals (3) increase your appetite (4) tell your future.
9. All science-fiction fans have good: (1) manners (2) imaginations (3) bodies (4) dancing ability.
10. "Skylark" was a: (1) space-ship (2) air-pirate (3) patent medicine (4) fish.
11. Science-fiction novels were published in: (1) Science and Invention (2) Popular Science (3) Scientific American (4) Science et la Vie.
12. An unwelcome element in science-fiction is: (1) humor (2) adventure (3) ghosts (4) space-travel.
13. The best science-fiction motion picture of 1932 was: (1) "Dracula" (2) "Frankenstein" (3) "The Phantom of the Opera" (4) "Chandu, the Magician."
14. Argosy has printed stories by: (1) Ralph Milne Farley (2) Julius Schwartz (3) Jack Williamson (4) Andrew Lenard.
15. "The Magazine of Prophetic Fiction" is a term used on the contents page of (1) Weird Tales (2) Amazing Stories (3) Astounding Stories (4) Wonder Stories.
16. David H. Keller, M. D., has never had a story in: (1) Weird Tales (2) Amazing Stories (3) Astounding Stories (4) Wonder Stories.
17. John Russell Fearn's stories are: (1) scientifically accurate (2) highly imaginative (3) very slow (4) clumsily written.
18. The SCIENCE FICTION LEAGUE has: (1) chartered Chapters (2) held a national convention (3) transferred its Headquarters (4) inaugurated a president.
19. Forrest J. Ackerman and Jack Darrow are: (1) authors (2) artists (3) fans (4) publishers.
20. John Hanson was a character created by: (1) S. P. Wright (2) L. F. Stone (3) H. K. Wells (4) E. R. Burroughs.
21. In science-fiction, a time-machine is used for: (1) travelling in space (2) going into the past (3) winding clocks (4) keeping rhythm.
22. A typical science-fiction heroine is: (1) a dress-maker (2) a stenographer (3) a housewife (4) a scientist's daughter.
23. Space-ships are thought, by authors, to be in danger from: (1) air-friction (2) traffic lights (3) meteors (4) interstate commerce.
24. People on Venus, in stories, are often called: (1) Venerians (2) Venusites (3) Venusians (4) Venusianas.
25. Stories about trips to Mars are classed as: (1) interplanetary (2) biological monstrosities (3) antediluvian (4) futuristic.

PART THREE

Completion

1. The stories of A. Hyatt Verrill appeared solely in _____ Monthly and Quarterly magazines.
2. Burroughs has written _____ important series of books.
3. The first issue of _____ contained a reprint of Wells' "Diamond Maker."
4. _____ does the book reviews for Amazing Stories.
5. The only independent science-fiction fan publication of note is _____.
6. The "perfect" method of binding was once used in _____ magazine.
7. The two authors, _____, appeared in all the early Gernsback Amazing Stories.
8. "Through the Dragon Glass" was the first published story of _____.
9. There are _____ booklets in the Science Fiction Series.
10. The first Science Fiction Classic was "_____ by Garrett Smith.
11. The early Munsey magazines called science-fiction "_____ stories.
12. _____ was the chief artist of the old Clayton Astounding Stories.
13. "The Thrill Book" was the _____ magazine specializing in fantastic literature.
14. There have been _____ stories in the "Sky-lark" series.
15. The Assistant Secretary of the SCIENCE FICTION LEAGUE is _____.
16. Students make up a great number of the _____ of science-fiction.
17. The "Kill-Your-Grandfather" argument has to do with _____ travel.
18. Tales of space-travel are called _____ stories.
19. Julius Schwartz is the editor of _____ magazine.
20. The SCIENCE FICTION LEAGUE _____ dues.
21. The type of paper used in science-fiction magazines is called _____.
22. The Science Fiction Swap Column appears in _____.
23. "Scientifilm" is a coined word meaning _____.
24. Two stars used most often in "scientifilms" are _____.
25. Wonder Stories' latest prize contest appeared in the _____ issue.

PART FOUR

True and False

1. Edgar Rice Burroughs writes for the science-fiction magazines.
2. Wonder Stories Quarterly can be found on important newsstands.
3. George Allan England appeared in Air Wonder Stories.
4. Many science-fiction classics are copyrighted by the Munsey Company.
5. A. Merritt's latest novel is "The Moon Pool."
6. Most of H. G. Wells' novels have been made into movies.
7. Ray Cummings has had some stories in book form.
8. Argosy has refused to publish science-fiction of any kind.
9. A. Merritt is the editor-in-chief of The American Weekly.
10. One of the fastest-writing authors is Arthur J. Burks.
11. Astounding Stories has always been a monthly magazine.
12. Hugo Gernsback used to edit Amazing Stories.
13. Wonder Stories has had more contests than any other science-fiction magazine.
14. P. Schuyler Miller's first story won a prize.
15. A sequel to the motion picture "Frankenstein" has been produced.
16. Elliott Dold is the only science-fiction artist who ever had a stf. story published.
17. The third issue of Miracle, Science and Fantasy Stories contained a surprise novel.
18. The revival issues of Astounding Stories contained some weird tales.
19. Wonder Stories is the only magazine to publish the works of Clark Ashton Smith.
20. All of Dr. Keller's best-liked stories have been quite short.
21. "Alice in Wonderland" can be considered science-fiction.
22. Weird Tales prints science-fiction in every issue.
23. John Russell Fearn is an Englishman.

24. The first science-fiction fan magazine was called Science Fiction Digest.
 25. All the current science-fiction magazines are bound with staples.

PART FIVE
Essays on Science Fiction

1. In at least 250 words, tell why you think time-travel is either possible or impossible.
 2. Explain what you would do if it had been proven to you that the world would come to an end one year from today, in no less than 250 words.

PART SIX
Personal Opinions

1. When do you think man will reach the moon, if at all, and why? (At least 100 words).
 2. If you were asked to be a passenger in the first rocket to the moon, after being convinced that it was possible, would you accept the invitation? (At least 100 words).
 3. What do you think about the feasibility of a universal language? (At least 100 words).
 4. How long do you think man will survive on this planet, and why? (At least 100 words).

PART SEVEN
General Science

1. Why could not life, as we know it, exist upon the moon?
 2. What element is the most necessary to support life?
 3. How many moons has Mars?
 4. What is the root word of "astronomy"?
 5. Which of the ninety-two elements have been unidentified?
 6. Why is the symbol for water H₂O?
 7. Is the speed of light below or above 186,000 miles per second?
 8. Do we know of any planets further away than Pluto?
 9. Why isn't pure gold used in making jewelry?
 10. What is a light year?
 11. What are Tycho and Copernicus?
 12. What was the Cro-Magnon Man?
 13. What contemporary animal flies like a bird?
 14. What was Thomas A. Edison's greatest invention?
 15. Is magnetism related to electricity?
 16. Why does a compass point north?
 17. Which is the largest ocean in the world?
 18. Why is it dangerous to inhale automobile exhaust?
 19. How many units are in a score?
 20. Can birds and fish be considered animals?
 21. What is a mule?
 22. What are rotifers and spirogyra?
 23. Why are tall buildings terraced?
 24. How fast does electricity travel?
 25. What is the approximate diameter of the earth's orbit?
 26. How can the heat from the stars be measured?
 27. Might there be a fairly large planet closer to the sun than Mercury?
 28. Who built the first printing press with movable type?
 29. What is the air pressure at sea level?
 30. What color is mercury, the element?

NOTE: We wish to extend our thanks to Oswald Train, a Pennsylvania member of the LEAGUE, for his assistance in compiling this test, by submitting many typical questions, many of which were either used or offered good suggestions.

THE BIBLIOGRAPHY

You will remember that our famous author and Executive Director in the LEAGUE, P. Schuyler Miller, suggested some months ago the compilation of a grand bibliography of science-fiction to include fantasy that has appeared in magazines and books as far back as we can penetrate. Mr. Miller, along with Mr. J. O. Bailey of Chapel Hill, North Carolina, and many other active fans, is composing his share of the work, and other members have sent in their lists of science-fiction stories for this item. If you know of any out-of-the-way science-fiction, send us the names of the stories, authors, magazines or books in which they appeared, and a few words concerning the nature of each story, so that we may know it is science-fiction. Your aid in this matter will be appreciated and credit will be given you. Many members have already sent in small lists. Among these are LeRoy Christian Bashore, Oswald Train, Paul Valansky, Carl Adams, and the Leeds, England Chapter of the LEAGUE, etc.

CHAPTER NEWS

Jim Blish of the proposed East Orange (N. J.) Chapter informs us that he is resigning his volunteer Directorship because East Orange is located too near to the Newark Chapter, and he feels that the Newark branch should get better under way first. When that is accomplished, perhaps the East Orange Chapter can become a reality.

Our Sydney, Australia Chapter is doing remarkably well, and now has six regular members. Meetings are held regularly every fortnight. In response to the Director's suggestion to Headquarters, we are now printing the full addresses of our foreign Chapters in each issue once more, to eliminate the necessity of foreign members losing weeks and months writing to Headquarters for them, although space does not allow similar procedure for the domestic branches. Their addresses can be had from Headquarters.

One of the Sydney members owns a printing press and the Chapter is now circulating science-fiction and LEAGUE propaganda in conspicuous places and in science-fiction magazines. The Director urges all members of the LEAGUE to attend some Chapter meetings, if they never had before, to learn for themselves what meetings of science-fiction fans really mean to each other. He even suggests that everyone be compelled to attend at least one meeting, but of course, we don't want to become Dictators! The Sydney members have discussions on such subjects as "Science vs. Religion."

After an organization meeting of the Nassau Chapter on Sept. 17, 1935, at which time a \$50 monthly dues was decided upon, refreshments were served. The Director gave a talk on the purposes of WONDER STORIES, and Miss Minka Blum was elected treasurer.

At 8:30 p.m. on September 20th, 1935, the first meeting of the Beckley (W. Va.) Chapter took place at the home of David Abrams. All the members were present and seven visitors. Current science-fiction was discussed and it was decided to make an active drive for new members. A constitution will probably be drawn up and meetings will take place every Friday evening at eight p.m. at Mr. Abrams' home. A club library is being kept at the Director's residence in Wickham.

On September 7th, 1935, the Leeds, England Chapter celebrated the election of a new member already known to the readers of WONDER STORIES, Mr. W. A. Dyson of Huddersfield. He contributed forty science-fiction magazines to the club library. The bulk of the meeting was spent in sorting, classifying, and discussing these new books. Four other members were present and tea was served at 18.30 hours.

Due to the publication of the Third Science Fiction Test in this issue's department, we have been forced to abbreviate the "Chapter News" section and postpone the "General Activities" items to next month.

NOTICES

Members who would like to form local Chapters need only have three members to secure their Charters. After the Chapter is organized, members will come in more quickly.

There are no dues or fees of any kind conducted by LEAGUE Headquarters.

We urge all of our members and readers to send their names to E. C. Reynolds, 3235½ Descanso Dr., Los Angeles, Calif., telling him that they will be willing to support any new science-fiction movies that may be produced in Hollywood. These petitions will be submitted to the studios.

Members of the SCIENCE FICTION LEAGUE can secure discounts on current science-fiction books by writing for them to the publishers requesting, as a member of the LEAGUE, the discount such persons are due.

There are still several members who have not claimed their certificates. If you cannot call personally at our office for it, send fifteen cents to cover handling and mailing costs. You will find it necessary to have a certificate in order to enter any Chapter, and for other times when identification is necessary.

Headquarters has prepared a four-page leaflet adopted from our editorial in the May, 1934, issue of WONDER STORIES which outlines the rules and purposes of the LEAGUE, with an application. These will be provided free of charge to those who wish to join and have not already done so, or to members who want to convert others. Please send a stamp to cover mailing cost.

The Reader Speaks

EDITOR



IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good,

old-fashioned brickbat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps, to cover time and postage, is remitted.

Mr. Lenard Returns

Editor, WONDER STORIES:

Safely tucked away in an inconspicuous corner of a well-known fan magazine, a short notice printed in the smallest type available announced the startling and shocking fact that three members have been expelled from the bonds of the SCIENCE FICTION LEAGUE because of disloyal behaviour. The September issue of WONDER STORIES carried this news right at the beginning of the S.F.L. department, and there was an explanation why this radical step was considered necessary.

Oh well, my dear American friends, you seem to be a bit overfed with science-fiction. Yes, your restless pretensions are keyed to such a high pitch, that sometimes you seem to forget the most primitive claims of good education and well-bred behaviour. I see an ad on the inner cover of W.S. about a book "100 Points in Etiquette and 101 Don'ts." Buy this pamphlet by all means, and learn it by heart. Perhaps then it will dawn upon you that it is not exactly right to conduct a concealed attack upon persons, associations, magazines which have been founded to serve your pleasure and to furnish you with a variety of entertainments, especially adapted to satisfy your personal taste. If you think that you have a cause to dislike a particular science-fiction club or magazine, just leave it alone and abandon your connections with it. But it seems not fair to put your petty personal interests in the foreground and try to seed disunion into a perfectly quiet and satisfied community. After all, there may be hundreds and hundreds of readers and members who are satisfied. A successful attack would have deprived thousands of their favourite magazines and science-fiction club. Not that I think such a result would have been in the realm of possibilities. Where were your wits, when you concocted this senseless conspiracy? Of course, the editors don't deliver you the mag alone for your love of science-fiction. They have to live, and so have the authors, printers, and employees. The S.F.L. has of course, a bit of concealed propaganda between its purposes. But what of it? I don't see any harm in these points. You must pay for any other mag too, and all science-fiction clubs, with the exception of the S.F.L., collect their fees. You are like spoiled children, who enjoy forming gangs and search to destroy the imagined enemy. What does the name of a science-fiction club or of a science-fiction mag mean? I don't think I'll offend the Editors in saying that it does not mean a thing. The real science-fiction fan will read all magazines on these lines, and he will adhere to a club or several clubs if he is a believer in club co-operation. Just what the name of the magazines and the club is, is quite irrelevant. It is a publication serving beloved literature, and an association where kindred souls can exchange their views and opinions. The more there exist, the more we can enjoy our hobby, and it is a sin to try to destroy one. That your attack was directed against a foundation of Mr. Gernsback, a dean of science-fiction, makes it all the worse. Fortunately, he is immune against such poisoned arrows, and emerges unscathed from the combat. Let this be a warning for future villains! There is no glory in trying to slay the good. I have a strong hunch that a certain personality, a well-known and once famous science-fiction fan is behind the scene, and that the threads run into his balled fists. Enough of this shameful chapter!

Dear Editor, listen to my plea! You strive to hold and heighten the level of the magazine. It is high time that you begin the good work in the readers' department too. Isn't your new policy valid for these columns? You know well that most of the readers begin with the letters. Therefore, you must strive to give a good first impression. American humor is not always easy to grasp for the European mind. I know this from the movies, where scenes causing probably uproarious laughter in America, go over the screen in icy silence with us. But don't tell me that the crazy ravings of the "dictators," the nonsense about the wire staples, and the gibberish connected with these things are outstanding examples of American humour! Even if they were, the ceaseless repetition of these lunatics takes the last bit of mirth away, and there remains only a tooth-gritting and fist-clenching annoyance seconded by a bad taste remaining in one's throat. You have abandoned to print letters containing lists of liked and disliked stories. Your next step must be to procure a waste basket for the communications I referred to. And you, gentlemen, (no ladies involved, luckily) aren't you ashamed of yourselves to fill the pages of the readers' column with your nightmares talk? Don't you think that all sensible readers will call the wrath of the deities upon your pin-sized heads? Serious correspondents will slowly cease to send in their letters, because it irks them to be put into the vicinity of some puerile nonsense. Come on, you readers, speak up! Don't you share my opinion? Of course, I don't object to manifestations of real and healthy humor (we have some examples of it too) but I positively refuse to be dished with unheard of silliness.

I never became personal up to now. Let me make an exception this time.

Miss Kidd: I didn't get you quite exactly. If you like my letters, I make you my bow. If you don't, I offer you a remedy. Try to write a treatise on science-fiction, ready to go into print, in a tongue foreign to you. Suppose you take French or German, but preferably I would suggest Hungarian. No offense meant, but please consider that for my humble self, English is an alien language. No, no, let your typewriter rest. Shake hands instead and let us be friends.

Mr. Sutcliffe: My new film, "The Fatal Voice," nearing its completion, is a photoplay about a murder by sound resonance, but the photos from it do not offer any spectacular views. The action takes place in everyday surroundings, and all there is to see is in best case a chemical laboratory. So I don't send any photos for publication.

Mr. Bashore: I am not master enough of the English language to attempt writing novels. However, I am preparing for some time a skeleton plot to a sequel of "Today's Yesterday" by Rice Ray, which appeared in the January issue of W.S. 1934. My time is very restricted, and it will last a hit until I can send the plot to these Editors. An American author should elaborate it and I hope that it will be accepted and will please the readers.

To several correspondents: The cost to duplicate my science-fiction films is prohibitive, so there is no hope to let them be printed. In fact, "The Catastrophe" would cost about \$120. to be printed, although it is true that it runs 45 minutes on the screen. Thanks for the complimentary comments on my letters. I try always not to disappoint you, and therefore I

only send an epistle when I have *really* to say something.

It is high time to close down, otherwise a certain amount of gibberish would be simply crowded out from this department. And what a pity it would be!

Yours for a distinctly higher level in the readers' department.

ANDREW LENARD,
SFL Member 454,
Budapest, Hungary.

(We are certainly happy to print this latest letter of Mr. Lenard's, after his absence from these columns for several months. His missives are certainly a credit to the department, as many other readers have already commented.

We are contemplating a gradual reduction of the SPW business in the letters printed here. We have received several complaints from fans that the "dictator" affair is being over-done.

We hope that Mr. Lenard can find "something to say" every month, for there is nothing we would like to do better than start this department off with one of his letters in each issue, and we are sure that few readers would object to this.—*EDITOR.*)

Science Fiction's Merits

Editor, WONDER STORIES:

Often while reading science-fiction, I have been impressed strongly with the apparent power for good and future welfare of the human race which a wide-reaching of such fiction might accomplish.

Reading "Martian Gesture" by A. M. Phillips brought that again to mind. The detached, yet high-minded, interest with the clear and high resolution to rectify the petty mundane errors of earthly beings represents about the best output of which the human intellect is capable.

It is my judgment that were it possible to have a sufficient number of competent minds in the whole world receive and retain a mental attitude through reading such fiction as Alexander M. Phillips' "Martian Gesture" inculcates in my own mind as regards earthly problems and conduct, it would be possible to create a clear-thinking directing force in civilization capable of sweeping aside and overcoming all obstacles.

I feel the psychological and practical result of such dissemination would in years to come surely and definitely bring about the highest ultimate goal.

Perhaps some might consider my expression fantastic or far-fetched. I am a profound believer in the psychological effect of directed absorption by reading on most human intellects.

What the brain has received it cannot entirely relieve itself of and such impressions retained must have some considerable effect on human conduct and effort.

I am an engineer, mechanical, and do very little writing, so trust you will bear with a crude attempt at expression.

FRANCIS G. HALL, JR.,
Roslyn, Pa.

(We are glad to publish these constructive comments from someone who has analyzed science-fiction from all angles. They certainly provide a forceful argument for our side, and many of our readers may find it advisable to keep these thoughts in mind when introducing science-fiction to their friends. We hope Mr. Hall will favor us with more letters in the near future.—*EDITOR.*)

"A Slap on the Back"

Editor, WONDER STORIES:

This is the first time I've had occasion to write to *Wonder Stories* although I have read the magazine intermittently for the past eight years. The latter fact is nothing to be proud of, inspired mainly by a hope that yet unachieved.

At certain phases in my science-fiction life, I quitted science-fiction in disgust for about as long as six months at a time, only to resignedly return, even obtaining the back numbers of those issues I neglected to read. Now to my great astonishment, I find that I have been reading science-fiction for a little more than a year continuously.

I have attributed this to either one of two factors. One, a sudden increase of interest and two, a per-

ceivable change in the type of science-fiction. It is the second factor I deem responsible for the first. Upon investigating and comparing the old with new issues of *WONDER STORIES*, I find a radical change in the new. The "new" *WONDER STORIES* has something which other science-fiction magazines lack. The "new" *Wonder Stories* is alive!

You are no doubt wondering by this time what is the purpose behind all this gibberish. It is to give you, the editor of *Wonder Stories*, a hearty slap on the back (figuratively speaking) complimenting you on your marvelous improvement of *WONDER STORIES*. No wonder all your readers sing your praises. You deserve them and more. Anyone who realizes the tremendous amount of effort required to keep up the standard set by *WONDER STORIES* will join me in my hearty felicitations.

"Good luck, *WONDER STORIES*, and more power to you!"

IRVING L. KOSOW,
Brooklyn, N. Y.

(During the past few months, we have printed a few letters in which some of our older readers claim that the old *Wonder Stories* was the best, which opinion we resigned to the fact that those particular readers were losing interest and blaming it on the science-fiction. Mr. Kosow shows how the opposite is true. The "new" science-fiction is reviving and arousing interest all around. Previously "occasional" fans are becoming steady readers. At one time, science-fiction was not powerful enough to force them to purchase it regularly.

A lot of people don't like us because of our New Policy, though—those authors who, though popular in the old days, cannot put anything across today because they do not have the knack of composing original material. They are still writing in the old stereotyped styles of the twenties, left behind by the constant evolution of science-fiction.—*EDITOR.*)

Life on Other Worlds

Editor, WONDER STORIES:

In my estimation, a comparatively short story captioned "The Space Lens" was the finest one in the September issue of *WONDER STORIES* magazine. As is often the case, this particular narrative, although short when compared with the others, stands out as an exceptionally fine piece of science-fiction. Is Jules Verne Gordon a new author on your staff?

In reference to that excellent little article, "Man Will Reach the Moon," which appeared in this issue, I want to say a few words.

I agree with Dr. Heber D. Curtis, observatory director at the University of Michigan, when he declares that science does not definitely know whether or not life exists on other planets. Although telescopic examination of the various planets, Mars, Jupiter, Venus, etc., has as yet failed to reveal signs of life upon any of these bodies, that is not sufficient reason for believing them to be uninhabited. Recently, I read an astronomical article in a newspaper, in which the writer stated that, in all probability, this earth is the only inhabited planet in the entire Solar System, and quite possibly in the whole universe. According to this writer, life is a unique phenomenon limited to this tiny earth. Now a remark such as that seems to be the product of a very narrow mind. This insignificant ball of matter upon whose surface you and I and the two billion other beings are dwelling is one of a large number of somewhat similar bodies which go to form what is known to us as the Solar System. Giant telescopes and other astronomical instruments have supplied us with much valued data, concerning the size, dimensions, and approximate distances from this earth, of the various celestial members of the Solar System, but the moment the question of life enters into our discussion, we must admit that the accuracy of these instruments cannot be depended upon. The fact remains that no astronomer or physicist has ever stood upon the surface of Mars, Venus, Saturn, or any other member of the Solar System, except of course, the earth. At the present moment, the popular conception of astronomer seems to be that there are probably a million or more other Solar Systems in the universe, and that these other Solar Systems may be constructed on the same design as ours, and for all we know, perhaps each one contains one or more inhabited planets. Research work conducted by astronomers has not yet reached the point where it can tell us definitely and truthfully whether or not

this tiny earth is the only inhabited planet in the entire Solar System. Just now neither the astronomers nor their instruments are qualified to make a statement pertaining to life on other celestial bodies. When you take into consideration the fact that astronomers cannot even explain the significance of those markings or "canals" on Mars, or the peculiar red coloration exhibited by the planet, you must realize then, that it is incredible to assume that astronomers can speak with any large degree of certainty upon the subject. And for that matter, what do we know about the other side of our friendly luminary of the night—Luna? Has anyone ever seen the other side of the moon? Can anyone prove that it is different from the side which is visible to us? There are quite a few other enigmatic points in our immediate Solar System. It remains to be seen whether or not "life" is a unique phenomenon confined to this tiny globe."

Astronomical research work conducted with instruments far in advance of those which are in use today, will in all likelihood give science rich returns and a good deal more information relating to the size, dimensions, and structure of the various units of the Solar System, and of other stars, suns, etc., outside the Solar System, but, as Dr. H. D. Curtis informs us, until the advent of a rocket in which man may fly to make a truly accurate examination of the planets, including the moon, we have no right to presume that life does or does not exist upon other planets.

And now, in closing this letter, I should like to touch upon a point which I have had in mind for quite some time. Why not ask one of the authors on your staff to write a narrative or two on the subject of chemistry? It seems strange that *WONDER STORIES* contains so few stories relating chemical experiments and research work. I am sure that many readers would appreciate a story or two on chemistry.

FRANK C. DANNBACHER,
Brooklyn, N. Y.

(Your opinions on the possibility of life on other worlds are perfectly in line with what we believe, except that our views are even broader. We hold that there *must* be other worlds that are inhabited. Perhaps there is not one within a billion light years, but if the universe is infinite, as it must be, so must the chances of inhabited worlds be, and therefore, there are an infinite number of them in existence. The only thing we can't be sure of is how close together they average. Every other world may be peopled by some sort of life, and then again, maybe only one in a trillion trillion—yet the number is still infinite. Also consider the fact that life can take many forms. We may say that there could not possibly be life on the moon because it is airless—but how do we know that a form of life could not have developed that took its nourishment directly from the soil? We might also say that it is preposterous to conceive of living things within the sun—but not knowing just what intelligence is, why could there not be intelligent grasses that call the sun home? Someday man might fly to Mars and not find any life there—yet the surface of the world might be actually teeming with life, but life so alien that it appears to us only as a chemical reaction, or something. Yet to a non-science-fiction fan, all these "fantastic" theories would sound like the ravings of a mad-man.

We do have occasional stories of chemistry, though good, absorbing ones are indeed hard to find.—*EDITOR.*)

Everything is Nothing

Editor, WONDER STORIES:

I hope you will be able to find a place for this letter in "The Reader Speaks."

In reading science-fiction, people are liable to become, cynical. Most educated people are cynical. The reason for this is that they have been trained not to accept anything until it is proven.

Mankind was once an unthinking animal, but thanks to two organs, his hands which could be used in a myriad ways, he at last was able to reason. Man is a land animal, but he flies, swims, travels faster than any other animal and can travel under water. His hands are largely responsible for all these things.

Scientists tell us that the Earth will be habitable for several million years yet, barring accidents. In that time, other animals on Earth will probably rise

to intelligence. The dog is probably next in line for promotion. The dog who is mankind's most faithful friend should make an excellent companion for man when he finally evolves to the reasoning state. Will some author take this hint and please write a story around the development of the dog's reasoning power?

Man is the most beautiful animal on this Earth. In the next few thousand years, his petty hates and other things that tend to make him unbeautiful will atrophy, and he will become a perfect animal.

The Solar System revolves in its little niche in the Milky Way which in turn revolves in yet another more stupendous galaxy which in turn is in still another super-universe, and so on until no one can ever guess the infinitude of other super-universes.

All of these are made up of infinitely small molecules, atoms, electrons, and protons. All of these follow certain natural laws and cannot be deviated from these laws of nature. When thinking of these infinitely small building blocks, it heboves us to ask, "What are they made of?"

Recent experiments and conjecture seem to point to the theory that they are merely particles of distorted space—that is, they are pieces of misshapened nothing.

Super-universes, galaxies, solar systems, atoms, and electrons all following unrepeatable laws and each a definite part of everything and yet in the last analysis are made of nothing.

It is foolish to say that all these things are an accident. It is evident all around us that it was all planned.

Cynics will say that I am a religious person, but that is not so. I adhere to no special belief except the belief in man. I do not even claim that there is life after death, but my mind refuses to believe that all the wonders of creation are an accident.

Please keep up the good work and let us have some good stories about psychology, chemistry, and future evolution. I am writing to Mr. Ackerman for his pamphlet on Esperanto. He should be highly commended for his work to spread this international language.

Please excuse this rambling letter, but with careful editing, it should be presentable in our column.

RONALD H. ANGLIN,
Danville, Va.

(We are certainly proud that science-fiction can lead young minds into such broad-viewed trains of thought as shown by the above letter. Mr. Anglin certainly shows up a first-rate imagination with these logical theories.

Regarding the growing intelligence of other animals, though, we believe that the ape, or monkey family is quite a bit above the dog. They have the advantage of hands with which they can work like a man—sadly lacking with the dog. However, by the time that the monkey is as intelligent as man is today, what will man be? It is not to be supposed that intelligence has reached its apex with the *homo sapiens*.—*EDITOR.*)

Similarity in Development

Editor, WONDER STORIES:

The July *WONDER STORIES* is just to hand. I see (page 246) that another Londoner, D. W. Holland, is slamming "Marsian Madness" even harder than I did, and he gives a name to the author of "Pioneers of Pike's Peak," which I didn't.

This totally independent corroboration is not unwelcome. As before, the editor's note rather misrepresents me. It may be a decade since I last read "P.P.P." but it certainly isn't two. I was not reading magazines that long ago. And it was I that called upon Mr. Cleator, who happened to be in London at the time. He did not visit me.

Since I am so late in obtaining my *WONDER*, you have probably received a synopsis of "P.P.P." before now, from Mr. Holland or somebody. However, it will do no harm to give my version (from memory, mind). The skeleton plot of these two stories (and countless others) would be somewhat as follows:

"A small party, venturing into unexplored territory, encounters strange and inimical creatures, which attack and overcome the explorers, a single human wreck returning to tell the tale."

The great points of similarity between "P.P.P." and "M.M." lie at the beginning and the end of the yarns. No one, I think, could avoid the conviction that the writer of the one story had read the other,

though the copying, or "piracy" was quite probably unintentional, or even unconscious.

Condensed version of "Pioneers of Pike's Peak." A party of travellers are stranded at an out-of-the-way inn, somewhere under the Rockies (presumably). A badly disfigured cripple, known as "Mad Harry," sees these people looking at, and discussing Pike's Peak, and launches into a tale of how he, "Hiller," "Dawkins," and (I think) a fourth man, set out to climb the mountain. "Mad Harry's" wife didn't want him to go. (There is no particular resemblance between the rock-climbing and the rocket-flight.)

Somewhere on the heights, the climbers are cornered by swarms "which must have contained trillions" of huge spiders. For a time, they stand the insects off, with shot-guns, but of course are finally overwhelmed. (The climax of the story is the part which I claimed, and honestly thought, at the time, was a "word-for-word" copy. If Mr. Cleator really never came across "P.P.P." it is an amazing coincidence that he used almost identical wording and construction.) At this point in his narrative, "Mad Harry" begins to slap at imaginary spiders, yelling, "Keep them off me!" and acting violently. He floors one of his audience, and has to be carried out by two husky pygmies of the innkeeper's. (The "Martian Madman" isn't quite so maniacal, but you see the similarity?) Then the innkeeper explains, in very, very, similar terms in both stories, "He's sane most of the time, but when he gets telling that story . . . He always tells it the same way" . . . "I believe it's a true story." . . . "The party went out; he came back." . . . "Those scars . . . all over his body. Doctors can't think of any creature whose bite makes a mark like that." I am purposely not trying to quote actual terms. That is the gist of it.

I can't agree with fellow-citizen Holland about Morey, (quite the contrary) but I too think that Paul is not so much an artist as a draughtsman. It takes a draughtsman, and a good one, to design machinery, buildings, etc., the way Paul draws 'em. Wesso or Dold may do a better human being, but a group of figures by these—especially Dold—looks like a box of toy soldiers for stereotyped uniformity. *Per contra*, the illustrations for "The Time Express," "Prophetic Voice," "Cosmic Joke," and on a slightly different line, "A Visit to Venus," form a really interesting study. There's variety. Almost every figure has a little something the others haven't got. Yes, Frank R. can sure draw a crowd.

The mystery of the "Dockweller-Martindale" is intriguing. Are you certain he is (or they are) a single person? The style of the letters seems very different. And Martindale writes like an Englishman. If it's a Jekyll and Hyde case, we seem to have an instance of both dual personality, and dual nationalities!

Once I start writing, it's difficult to stop! Just a little more, overleaf.

Please don't take it as a slam for your stories, when I say that I could easily stand for a fair half of every issue being used for "The Reader Speaks." The letters are so jolly interesting. I feel that I know heaps of fans, from their letters, better than I know people here in London. There are many things I should like to comment on, in the May and June numbers, and the July correspondence is rich in notable fans. Two Rothmans, two Darrows, Forrest J. A. of course, Virgil Kidd, two Londoners, a Scot, and an Irishman. Topping! Scientifans all, and d—n nationality!

Sorry to say that "The Waltz of Death" struck me as horribly disappointing. Altogether too much "padding." Pretty much all the stuff about Stickney, La Varre, Krausmeyer, Crowley Waite and his m—n, and the kidnapping, turned out to be utterly irrelevant. The "meat" of the story could have been condensed into novelette-length, easily.

REG. STEVENS,
London, England.

(As you predicted, someone did send us a detailed synopsis of "The Pioneers of Pike's Peak." After a careful reading of this resume, we find that there is quite a similarity in the plots, or rather development, of this tale and "Martian Madness." However, that is no reason to condemn the author. You state in one of your paragraphs that "no one could avoid the conviction of the writer of the one story had read the other, though the copying, or 'piracy,' was unintentional." If you had been an editor, you would know that such a thing is possible. There have been many, many instances when two authors have used the exact same plot, independently of each other.

written even at the same time. Some of our authors have reported that they are forced to destroy some of their best work, for just as they had a story completed, another would appear in print almost exactly the same in plot. This is a very common occurrence, and may happen days in succession. One day we received two stories of this nature, even to the point where the heroes' names were alike, except for one letter, and at the same time it was perfectly evident that the tales had been composed in complete independence.

Mr. Cleator has claimed that he never read "Pioneers of Pike's Peak," and as a prominent figure in the science and science-fiction world, we can take his word for it.

Readers have remarked on similarities in stories before, but we call a plot "hackneyed" if it has been incorporated many times, and do not go to the extremes of accusing authors of "plagiarism" and "piracy." We feel that you were altogether too hasty with your conviction of Mr. Cleator, and he can be excused for becoming peeved. Any author would, after laboring on an original story that may have also sprung up in someone else's mind sometime in the past in some form or other, and then having it instigated that he stole his story word-for-word. You should realize that any logical set of circumstances would naturally occur to more than one author, from time to time. You should not quote phrases unless you are sure of the exact words.

Your remarks about Paul and other artists are very interesting. You bring out some new angles on the subject.

We are quite certain, from our own analyses, that the letters of Dockweller and Martindale were written by the same person on the same typewriter. That English construction of his is put on, as you will see by subsequent letters.

The best works of one of the most famous authors in all history, your countryman Charles Dickens, are very voluminous, containing a huge portion of irrelevant material, but anyone can enjoy his stories just the same. In this country, it is considered a common thing for English authors to stretch their stories, but that does not necessarily detract from the merit of their work.—*EDITOR.*

The Price Again

Editor, WONDER STORIES:

A little said about the June issue is in order. I believe.

Laurence Manning hit the spot with his narrative term it, slightly exceeded himself in this cover . . . am getting madder and madder every time I see a Schneeman or Saaty in WONDER STORIES . . . reminds me of the junk illustrations in several other pulps I know of . . . you outdid yourself in getting "The Waltz of Death," even if it couldn't sell the slicks . . . too much drivel in this month's R. S. . . . something that's been worrying me for some time finally becomes plain: *NOT ENOUGH SCIENCE!* . . . keep that for your hope chest . . . as far as that price reduction is concerned—I'm indifferent; I'd just as soon pay 50¢, or 25¢, or even a dollar . . . so there you have my opinion on that one.

At least the edges are smooth, even though not even . . . A little too much "death"; I don't like to be reminded of weird fiction more than once a month . . . and there's enough of that in W. T. . . . Hurrah for Weinbaum! . . . the only fault I can find with the SFL dept. is the soleful lack of timeliness . . . that's not your fault though . . . imagine: minutes of a Feb. meeting in June.

Would suggest a little more variety of topics . . . can't describe the sorrow I feel because of the lack of adventure in W. S. . . . but . . . oh hell! Keep up the good work . . . we're for you . . .

LEWIS F. TORRANCE,
SFL Member 165,
Winfield, Kan.

(Of course, the fact that the price change of the magazine makes no difference to you—that you would just as soon pay 25¢ or 50¢ per copy—proves two things: (1) you have the money to spare and (2) you are a science-fiction fan. However, there are a lot of readers who had difficulty scraping up an extra quarter each month, and other potentials who would not even pick up the magazine in the first place with "25¢ per copy" on the cover.—*EDITOR.*)

From a LEAGUE Member

Editor, WONDER STORIES:

How do you manage to make each issue of W. S. better than the preceding one? That's exactly what you've been doing for the last several months. *WONDER STORIES* is now leading the scientific-fiction field, due to its "original plot" policy.

I hereby add my voice to those who have risen to congratulate you upon the publication of Eando Binder's "Dawn to Dusk." That story seriously rivals Olaf Stapledon's "Last and First Men." I liked "Dawn to Dusk" much better than "Enslaved Brains," also by Binder. Incidentally, that is the first time you have published two novels by the same author in seven months, isn't it?

Some readers object to Paul, but while I admit that he could improve, still he has less room for improvement than any other stf. artist. If you compare Paul to Morey, Morey shows up pretty sick. One of Paul's chief defects is the dark gray in so many of his pictures.

You are by now no doubt getting many objections to Emma Vanne's "The Moaning Lily." Well, here's at least one reader who liked it. A more appropriate place for it than W. S. would have been *WEIRD TALES*.

In the answer to Clay Ferguson's letter in the May issue, you state that you think one picture to a story is enough. Please remember that if you left out such puerile, sappy fillers as "Your Dream Come True" (Feb. issue) you would have more room for half- and quarter-page illustrations, scattered through the stories. Instead, you print two or three of these fillers in every issue.

Why is it that although W. S. says on the title page that it is on sale the first of every preceding month, it is almost always a week or more late here. Example: The March issue was out on February first. (This was the correct time.) The April issue did not appear until March eighth, and May came out April sixth. Also, why did you new magazine, "The Short Wave Listener," not come out here? I was anxious to buy it after reading your ad in the April W. S., but did not find it anywhere. Flint (a city of 150,000 population) is certainly entitled to a fair representation of copies.

In conclusion (all *BAD* things must come to an end) please note the correct spelling of my last name, which you misspelled both on my LEAGUE membership certificate and in May *WONDER STORIES*.

CARL E. WOOLARD,
SFL Member 742.
Flint, Mich.

(When *SCIENCE WONDER STORIES* was started, we printed novelettes, short stories, and novels by Dr. Keller in every issue, and he is the only living author who has beat Eando Binder for having material in consecutive issues.

We have not gotten so many objections to "The Moaning Lily." We feel that a majority of our readers accepted it favorably. It is all right to have a few of this scientific-weird nature a year.

We are now investigating the faulty distribution that *WONDER STORIES* is given in parts of the country, and hope to soon have the magazine on sale all over on the first of the month, instead of several days late in some cities. If you do not find "Short Wave Listener" on sale, your newsdealer can get it for you.

A new, corrected *SCIENCE FICTION LEAGUE* certificate has been sent to you to rectify the error. You should always write your name distinctly or typewrite it under your signature.—*EDITOR*.)

For Happy Endings

Editor, WONDER STORIES:

I suppose you must be getting pretty tired of receiving letters from me, but every time I read the latest issue of W. S., I have lots of things I'd like to say.

There aren't many things I can object to about your magazine, but there is one thing that I do object to very strenuously, and have to a certain extent ever since I first began reading W. S. It is this. In all your stories, I can't name one in which the author has successfully concocted an invention for the sovereign good of all mankind. Yes, wonderful machines have been invented and put into use, but what happens in the end? Our hero comes along at the most interesting point and gets some idea that eventually it's going to destroy either mankind or

the world and so he ups and destroys it, at the same time, in a measure, spoiling the story. Take Dr. Keller's story, for instance, "The Living Machine." (Please don't think I'm trying to pull the story apart. I have just about as much use for a person that does that as you have.) Wouldn't it have been better if Dr. Keller had, instead of abolishing the automatic automobile altogether, simply have brought suit against Pierce for having put cocaine in the gasoline, and then, after having proven his innocence, win back the public favor and continue making the auto-automobiles? As for thinking the car was run by a manufactured brain, that's impossible. Only God can make a brain. It was no more a brain than a modern radio. Now, if real brains were used, as in "Enslaved Brains," that would be an entirely different thing. And by the way, a sequel to Dr. Keller's story would be an ideal thing.

I would like to congratulate Stanton A. Coblenz for his good work in "In Caverns Below" personally, but seeing as how I can't, I can only hope that he reads this letter. Can't you, Mr. Gernsback, prevail upon him to write a sequel to that story relating Comstock's and Clay's experiences on an expedition back to Wu and Zu?

As for M. Kuletsky's and J. Arcier's letters, I do think they are a bit too radical in their view-points, but whatever they are, I do believe they should keep them to themselves. However, I'm not going to involve myself in your arguments with them, but I will say that I admire your courage in printing them. It shows a profound trust in your readers and science-fiction as a whole.

As for the *SCIENCE FICTION LEAGUE*, I have already written one or two essays on the subject, and soon intend to have a speech on it in Choate School, which I am now attending.

By the way, whatever happened to *WONDER STORIES QUARTERLY*? I don't see it on the newsstands any more. That, too, was a "well" magazine. I sure do miss it.

STEPHEN R. TUCKER,
Wallingford, Conn.

(In many of our stories, such as "Justice of the Atoms," you will find that all wonderful inventions do not prove a curse, although in real life it is likely that such radical changes will not always find a favorable response immediately. We have this in "The Memory Machine." That story ends on a note that should satisfy you perfectly. We have trouble with the new marvel, but in the end it is put under control, and not destroyed.

No one would like to see a sequel to "In Caverns Below" more than the editor. Mr. Coblenz does not go in for sequels very much though—but we'll still hold hope.

We don't think that it really takes much courage to print all kinds of letters. We think that it is not only fair, but really keeps interest alive in the department. It would be nice if all magazines did this.

WONDER STORIES QUARTERLY has not been published since Winter, 1933.—*EDITOR*.)

Poor Reception

Editor, WONDER STORIES:

The March issue was again splendid. Everything was at least good. "The Eternal Cycle" was the most thought-provoking, while the "Celestial Visitor" takes the prize for sheer entertainment. I hope you will publish more stories by this author.

The ending of "The Hidden Colony" was most disappointing. Considering its length, I thought it would have a more "complete" sort of conclusion. Perhaps we shall hear more of that marvelous farm in the future.

I liked "Pigments Is Pigments" for its science. Plenty of knowledge to be gained here. I criticize it for the casual way Mr. Dribben took the loss of his money. In my opinion, it didn't fit in with the rest of his character.

Many thanks for the "Advice for Authors" pamphlet received last week. I found it gave some very helpful information.

I am still reading criticisms of readers about the form of W. S. While I should like to see an improvement myself, I have no sympathy for those who persist in telling you of every little item which doesn't quite meet with their approval. Why don't they give you a break? And as for telling you what advertises they like and where to put them—I think that's going a bit too far. They should remember that without them, W. S. would probably cost about

two or three dollars a copy or else wouldn't be published at all. How would they like that? Not much, I'm thinking.

I am sorry to report that there is no further progress around here (with the possible exception of one) in obtaining new LEAGUE members. Friends or relations who see me reading science-fiction regard me as slightly mentally defective, and when I speak of fantastic subjects like interplanetary travel, I frequently receive uncomplimentary remarks. Nothing I say or show seems to evoke the slightest impression, and they sarcastically tell me I am a wonderful genius or professor and nobody knows as much as I. I then politely inform them that I am neither a genius nor a professor, but merely an imaginative reader of science-fiction, the only difference being that I possess a broader and deeper outlook on life, hence I cannot help looking at certain conditions or events from a different point of view. Because of this, I become a Socialist (as if that was a crime), an Athlete, and a diplomatist; I'm terribly callous. I'm devoid of interest in local affairs, (this is partly true) and altogether I have become a nasty man! Why? Because I read sf, and I am just beginning to realize the colossal minuteness of everything connected with our daily lives when compared with the immensity of the universe. And the more I read, the more scientifically minded I become.

I'll conclude in a somewhat lighter vein. As we're having a Jubilee here this week, and I've just a small bottle of—well something left, I will use it to toast (all by myself) to the long life of WONDER STORIES.

F. A. BREAL,
Essex, England.

We thought that the one really big feature of "The Hidden Colony" was its unusual ending. In real life, stories don't always end "happily ever after." The Germans are not always inclined to use this stereotyped conclusion, and this is what makes their novels particularly realistic. "The Hidden Colony" was not a tragedy, and it left the reader with a feeling of hope. You can compose the denouement in your own mind, but it would have lessened the value of the story had the author included it in the script.

Many of our readers have the same trouble with their friends that you have. It is difficult to get some people to realize the value of science-fiction, due to their sad lack of imagination—and imagination has led to everything we have today. Without it, those who ridicule science-fiction, along with the rest of us, would still be living in caves.—EDITOR.)

"Mephisto"

Editor, WONDER STORIES:

Having taken due time out in order to cuss thoroughly without any of the words leaking into this letter, I am now ready to jot down my impressions given by the "The Reader Yipes" department of your magazine.

My first conclusion was that the writers, editors and printers had gone out for a beer, or otherwise gone out. A normal state of censorship which exists in your offices was relaxed, and such letters as that of Mr. Robert W. Lowndes leaked in through a literary loophole. The science-fiction goes in the front, not the back, Mr. Lowndes. Shortly after reading this letter in print a tall, bearded man will walk up to you and tweak your nose. He will turn out to be Ivan, my valet, who is the world's open champion nose-tweaker.

Secondly, I discovered that the editors like to print long letters which fill up space. Witness those by Mr. Lowndes, M. Virginia Kidd (the editor will please stop punning Miss Kidd's name), Joe Hatch, Mr. Manthey and others. Just to be unpleasant, I am going to write as long as I please and stop when I run out of lemonade.

My third impression was that Mr. Hatch's "whoopee-soup" and the opinion pipe had been well-indoctrinated by all. Even the stolid editor had a few too many. As a result, he overlooked the tiny poem which introduces the department. Or maybe compliments are too rare to let one slide by. Well, don't worry, my friend, I am not going to discuss the magazine. My mission is to inform some of the more moronic readers that I am displeased and they are automatically in danger of their lives.

I wish that people would stop imitating and mocking Bob Tucker. Donald A. Wollheim merely wanted to crash into print when he organized his IAO—. Mr. Tucker has evolved something which has a firm

foundation, and I am wholly in sympathy with his movement. It is really a shame that Mr. Tucker and I have to live here as mere supermen!

George W. Green's letter can be done without very nicely. I am positive that it was not written in 1936, for all alcoholic beverages were destroyed in 1928. I think that his name, Otto B. Slayne, is very cute, however.

"Dr. Ellis Penthouse Swashbuckle" is a very crude pseudonym, Mr. Rogers. A short one like my own is more appreciated.

While letters should not be reduced to the proportions of the one by Ed. Camille, some writers should follow his example and write shorter and sweeter.

I agree with Mr. Moskal's remark about Kaletsky, but there was no need to discuss his opinion as he did. Nobody but Kaletsky would be displeased.

One thing that really surprises me is that the Editor did not rhyme "monocle" with Mr. McGonagle's name and make another lousy pun out of it.

Leroy Christian Babell's letter interested me, but he does not have to inform us that there is a war between Tucker and Wollheim. I shall enter the conflict before long and Wollheim will end literally deceased.

Fet gripes: Those people who think they know more than our authors and artists. Those people who fill space with long and abstruse calculations and end up by proving mathematically that they are dopes. Wollheim, Kaletsky, Knockers in general. People who copy off the inimitable Tucker. Readers who knock Paul.

Why were so many of your knees warped this month? See Miss Kidd's letter. Your printers are full of condensed pool chalk.

Do not let the fact of my nom-de-plume bar you from printing my letter. It is necessary that I hide my identity for the moment. I hope the people I have criticized will take a walk and then write several hot letters in reply to me. Great fun, isn't it? I am so disgusted that I am going out for a beer. Ivan is going with me.

MEPHISTO,
(Address Unknown).

(We are adverse to printing too many letters signed with pseudonyms, and were it not for the good-natured way that "Mephisto" compiles his criticism of other fans, this note would send its way into the dead-letter file. However, we thought that it was too interesting to let slip by, and anyway, "Mephisto" promises to reveal his identity soon. We do not advise readers to use pseudonyms. In fact, if we note it happening too often, we shall refuse to print any letters without genuine names and addresses attached.—EDITOR.)

"Scientihooey"

Editor, WONDER STORIES:

Following is a quote from EVERYDAY SCIENCE AND MECHANICS: "WONDER STORIES now 15¢ per copy, on all newsstands. The greatest event in the history of science-fiction! This astounding reduction in the price of WONDER STORIES is the culminating step in our struggle to get on top and stay there! etc., etc." You don't hate yourself, do you? You and van Manderpoots ought to get together.

The heat seems to have gotten a large number of scientists, to judge by the amount of nutty letters in "The Reader Speaks." Lowndes, Green, Camille, Swashbuckle, Moskal, all batty. Joe Hatch has three columns of utter drivel, especially the paragraph in which he criticizes a fellow named Rothman. Virginia Kidd is frivolous, but sensible. Manthey's paragraph on beer is simply beautiful. He ought to frame it. As for me, you ought to see the far fly when I spy a banana split, prowling around in my direction. The one by Doc Lowndes is goofy, but has a point to it.

About one of Virginia Kidd's paragraphs, I'm ashamed of her for not seeing "Metropolis," "Deluge," and "Just Imagine." I saw the first when I was knee high to a Martian Xyloshirhtog, and the other two are fairly Martian! Is that nice way to invite a young lady out to lunch, Horning? It's about as private as some of the love making in "The Green Man of Grapese."

Random thought: What does a green man look like when his face is red? (I dare Paul to make a cover of that one.)

About that story, I found just two faults with it; otherwise it was a swell yarn. In the first place, diamond could never be used for armor plate. Although it is hard, it is more brittle than glass, and would shatter at the impact of a .22 caliber bullet. As a matter of fact, it is dangerous to hold it in the

hand, as it is a very poor conductor of heat, and is liable to break like a glass tumbler when hot water is poured into it. Point number two is the chapter on the history. It is entirely unnecessary, out of place, and too obviously *Cohenesian*—especially the H. G. Wells.

"The Space Lens" presents a good idea except for a couple of factors. In the first place, there is about one chance in a trillion that the earth would be in the exact focus of the lens, and in the second place, the author disregards the rotation and revolution of the earth. Anyway, he saved his neck by mumbling some stuff about fourth-dimensional forces, because it would require a four-dimensional lens to project a three-dimensional picture. (A hint for advocates of three-dimensional movies.)

"One Hundred Generations" present no flaws as far as I can see.

"The Ideal" is an excellent scienticomedy, but the science should not be taken too seriously. The cover shows another flash of Paul's genius in drawing machines. In the interior drawing, the man in the foreground is out of proportion, and the machine is not the same as that on the cover. Also, the automobile is of 1933 vintage, when the story is obviously laid in the future.

"World of the Mist" presents a good idea which is entirely hidden in a maze of false science. A lot of things need to be straightened out. In the first place, the name of the stuff Manning tries to describe is Neutronium. A neutron is the ultimate particle of this. In the story it is described as having terrific valence, and an enormous affinity for electrons. Actually it is just the opposite. Neutronium is utterly inert, being composed of one electron and one proton, in contact with each other, so that their individual charges are nullified. Thus the enormous danger in handling the stuff, portrayed in the story, is nonexistent.

In order to bend the dimensions, considerably more than one gravity would be needed. More than several thousand g's, in fact, because there are stars that have such a gravity pull, and no such effect is noted. A body the mass of the earth, and having a diameter of five feet would have a surface gravity of roughly 64,000,000,000,000 gravities. Disregarding other complications, a body with such a tremendous gravity pull would warp space to such an extent that space would fold entirely around it, and it would be in a little four-dimensional pocket by itself. Thus, anybody having enough gravity pull to warp the dimensions to a sufficient extent as desired in the story could not exist in this universe.

Besides this there are the little facts of human beings standing such a gravity acceleration, and the fact that anybody of sufficient mass could not be pulled out of its path enough to form an orbit around the earth, etc. There are all sorts of problems connected with it, and the story does not take care of them at all. As I said before, the original idea is okay, but it was surrounded with such a maze of scientiohoey that it was all messed up.

One thing I forgot to mention. About the increased mass of the bullet being sufficient to effect the transition. If you will look at the Einstein equation for that effect, you will see that the increase in mass at such comparatively low speeds is almost nothing. As a matter of fact, a good solution to the story would have been to make a space-ship that would travel at the speed of light. The mass of the ship would be increased to such an extent that it would warp its own space and would not need neutronium.

What is this argument about the SPWSSSTFM and the IAOetc? Can't science-fictionists with imagination see that within the next hundred years there will be no more magazines to have any kinds of staples? Instead there will be wires upon which will be recorded telepathically the stories, to be actually experienced by the readers, instead of being read. Join the Association for the Prevention of Science-Fiction Magazines and the Advancement of the Telepathic Recording of Science-fiction stories! The APSMATTR-STFS above all!

I noticed that Gernsback got his name in *Liberty*. You ought to make Cummings an active member of the SFL.

MILTON A. ROTMAN,
Philadelphia, Pa.

(You should remember that the incident on the cover of the July number was just *suggested* by the story by Weinbaum, as the incident really never happened. Paul wanted to show what such a mechanism would do on the streets today.)

Don't be too sure that neutronium is utterly inert. No one ever saw any neutronium, you know, and

therefore cannot tell what it would do coming in contact with any of the ninety-two known elements. It is not an element itself, but a condition of matter. How in the world do you get such calculations as how many gravities would be necessary to bend the dimensions, etc.? Mr. Manning's theories are as good as anyone's. You make definite statements about things of which no one really *knows* anything, as though your theories were fact. Your conjectures are interesting, however, if unfounded.—*EDITORS.*)

The English in Him

Editor, WONDER STORIES:

Cheerio old chap! I have just finished reading the January issue of your jolly old book, and proclaim it superb. It is not quite so hilme easy to secure the dear old ripper over here, you know; that, no doubt, accounts for the jolly late date.

I always turn to the dear old readers' section first, you know, old bean. It's jolly good entertainment, more so than your perfectly rippling stories.

Speaking of your bally stories, perhaps the best I have ever read in my born days was a jolly little tale called "The Final Struggle." Its superbeens can never be put into words. It compares only to another bally story entitled "House of Monstrousness." I jolly well predict that your readers will vote these two charming tales the best of the year.

To return to the bally readers' section. A few of the letters therein puzzle me no jolly little. Especially these speaking of binding the bally old book with chewing gum, or some such thing. Really, old sock, pardon the denseness of this Britisher, but do those chaps, Tucker and Wollheim, actually intend to bind the blimed book with those things they advocate? If so, I fear I shall no longer buy it, for such things are jolly messy at times, and the cleaning bills over here are positively rippling!

One more question, old bean. Although I am a very young reader, 7 years, I have been reading your rippling book since its birth. I believe that I am the oldest reader in jolly old England, and I should like to be made the British Chief of your bally SCIENCE FICTION LEAGUE, and be in charge of the chaps over here who belong to the charming organization. What say?

SIR AUBREY MONTROSE TWIDDLEHAM,
"Twiddleham-by-the-Sea,"

Yorks-shire, Snooz, England.

(Perhaps Tucker wants the readers to know that he wrote the above letter, and then again, maybe he doesn't. It is our policy to keep the secrets of Dictators, so we'd better not let the cat out of the bag. The authenticity of this letter would immediately be doubted by any Englishman. They know that nothing can come after a "shire" but the name of the country.—*EDITOR.*)

A Fan for "Yars"

Editor, WONDER STORIES:

I call you a friend because for yars and yars I have been reading science-fiction, as presented by Mr. Gernsback, and throughout these same years I have derived my most enjoyment from the section devoted to readers' opinions.

From the old *Experimenter*, at least I think that was the name, down to your present publication, I have nourished a secret yen to write somebody about almost anything, just to prove that I can write, and maybe for the undeniable satisfaction of seeing my own opinions shouldering the various remarkable epistles that you manage to dig up.

The covers have been practically unaltered for as long as I can remember, and yet your circulation grows, so why, gentle, and not so gentle, readers, why worry about it?

Paul can draw figures, Paul cannot draw figures, Paul might draw figures; but even so, he does pretty well in dabbling with his modest unassuming little pastels, and only Leonardo could conceivably, of the great artists, become interested in painting a rocket ship, so why worry about it? Besides, he's dead. Naturally one wonders why M. Paul decided the robot from "Ideal" in the last issue would look better with two eyes instead of the one the author was satisfied with, but then, the author changed his mind in the next paragraph or two and spoke of "eyes" himself, so we can't blame the artist too much.

But there are a few things (heh, heh, I can see you winching) that have in the course of my reading, past and present, attracted my attention. For the last year,

I have thought that the plane of excellence on which you have managed to keep *Wonder Stories* was beginning to tilt down a bit, but with the September issue I believe you have regained or surpassed your former height. Congratulations, you certainly deserve them.

I believe that I have found the absolute ultimate in understatement on page 392, first paragraph, of the September issue. It is almost the only flaw I noticed in an issue of really extraordinary excellence. To me this is absolutely hilarious—Trench describing his friendship with Cogger Bent—saying “I believe I would die for him and think nothing of it.” Maybe I just have a perverted sense of humor.

Now if you'll promise not to say “this letter speaks for itself” or something along the line of that favorite gentle damnation you plaster onto defences “readers’ speaking,” I might not even write again for another ten years, thus saving your time and my typewriter—

Ross B. Baerw,

Ann Arbor, Mich.

P. S.—Being as I have been thinking of writing a few poems I strongly urge you to include vast quantities of poetry in your magazine. It adds so much to the general tone—

P. P. S.—Being as I have been thinking of writing a few stories, I strongly urge you to include work by vast quantities of new names in your magazine. It adds so much to the general tone—

(The monster-machine on the July cover was purely hypothetical, so no one knows if the finished product would have one eye or two.

We can see how you could derive humor from the statement of Trench you quote, though it never struck us as humorous when we read it—embedded as it was in serious matter. We don't believe that the author meant it to sound funny. Of course, if Trench died for Bent, he could think nothing—of it or anything else.

You will notice that we do not say “This letter speaks for itself” any more. The readers take it for granted that they do anyway.—EDITOR.)

Making New Fans

Editor, *Wonder Stories*:

I have read your most entertaining magazine for about one and one-half years, although this is my first letter to “The Reader Speaks.” The latter dept., in my opinion, is one of the main reasons why readers buy the magazine. Listen, Mr. Editor, are you blind? In the August issue, some fan who signed himself Oscar Pietzenbaum complained about the mushy sex ads. In your comment after his interesting letter you said: “The ‘sex’ ads are now all out—gone for good. See this issue.” Well, I saw this issue, and among the ads I read: “A baby in your home—Know Thyself—Sex Rejuvenation—Sex Vitamin ‘E’—Benefits and Dangers of Nudism,” etc., etc. Oh, well, as you said in your comment, we buy the magazine for its science-fiction, not for its ads.

It is rather hard to find new readers. You walk up to a prospect and gush: “Gosh, Bill, this is the kind of a magazine that you ought to be reading instead of those dime detectives.” You flash a copy of *Wonder Stories*. He says “Let's see it.” After looking it over, he hands it back and sniffs: “If you spend \$5 for a trashy thing like that, you're kookoo. That junk could never happen.” And you walk away, squelched. I've had that happen to me eight times.

The August *WONDER* was swell. Even with the price reduction, they keep getting better. Here's how I rate the stories:

1. “The Reign of the Reptiles.”
2. “The Man With the Four Dimensional Eyes.”
3. “The Worlds of If.”
4. “The Branches of Time.”

I think that the Voting Coupon was a good idea. It will provide the readers with the type of stories they like, instead of experimenting. (“The House of Monstrosities”—ugh.)

I eagerly await Laurence Manning's “World of the Mist.”

Douglas Blakey,
Minneapolis, Minn.

(The statement in the August issue about all the sexy ads being out was printed prematurely. There were still, as you say, a couple of them left—for the last time. You will find them 100% absent at the present time.

Perhaps you do not use the proper approach in introducing science-fiction to your friends. Of course, there are some people who could not enjoy it under any

circumstances. They lack the necessary imagination. In fact, some of them believe that imagination is to be ridiculed—imagination, that quality that has brought man out of the caves and into his wonder-world of science. Have pity on these unfortunate brothers of ours.—EDITOR.)

Paul “On the Mat”

Editor, *Wonder Stories*:

As I take my pen (pardon; typewriter) in hand to pen (type) you this little missive (or missile), I am sharing lugubriously at the September issue of *Wonder Stories*. Paul's covers are getting better, but they are still inaccurate. This month's cover shows van Manderoop's whateveritis preying on a 1935 model Ford car (I dare you to put asterisks in place of Ford, although it's not a rival magazine) when the story is supposed to take place in the 21st century. Furthermore, the auto has no license plate in front (now tell me the car is from Florida, where they don't have license plates in front). Maybe the jigger is a motor cop in disguise and is just pinching him for being without a license. (It's a pretty powerful pinch). Outside of this, “The Ideal” was ideal.

As for the “Green Man of Graypec” words cannot begin to describe the amorous quality of its odiferous delectability (or something). In other words, it was swell, colossal, stupendous, etc. We want a sequel. But just the same there are two, maybe more, mistakes in the illustration. In the first place, when “a ship of the enemy got above the battle and decimated us,” they are fighting in planes and Kastrove is also in a plane in the air. Paul's picture illustrates a scene from another part of the story. Even then the illustration is wrong. When Kastrove and his driver were hiding from the Larbie ship, his hair had been removed by the scientists at Impel, making him look more like a human; in this picture he is as hairy as ever. But I suppose Paul wouldn't be Paul if he didn't make mistakes for poor writers-in like me to use up typewriter ribbon telling the editor about them. Sometime (just for fun) have Frankie read the story before he illustrates.

Some day, I'd like to find out who writes those cute (?) little paragraphs at the end of the letters in “The Reader Speaks” department, so I can send him a bouquet—of poison ivy. (Just for that he won't print this letter—that's a hint that I want this letter published). Him and his puns; if he could only see how some of them look to others, for instance; kidding Miss Kidd, Fred Anger's anger, Dr. Swashbuckle's trip to Ma's, etc. If it is Mr. Chas. D. Hornig that writes these, I have a choice pun for you: Stop Horni(n)g in! Wow, did that get him? Or did it? I wouldn't be surprised if he is still sitting at his desk, unperturbed as ever, smirking at this letter before throwing it in the waste-paper basket.

Before closing this letter, I could tell you that I was only kidding, that I think the editors are perfectly right in their choice of stories, that Paul's drawings are simply marvelous, that W. S. has improved since the lowering of the price, and that she is the best of all the other stf. magazines, etc.; but I won't. So long!

RICHARD WILSON, Jr.,
Richmond Hill, N. Y.

(Seeing that the cover for “The Ideal” did not illustrate a scene from the story, we can say anything about it we please. The car in the picture was not from Florida. It was just placed there as a decoy to bring the monster out of its lair. The fellow jumping out of the car was unaware of its purpose and had stealthily crept into it with the intent of driving it off. However, both were foiled. There was no gas in the tank so that it could not be driven off anyway and the monster would have none to drink.

Though the writer of the paragraphs at the end of the letters—one of which this is—knows that puns are poor taste, we fear that there is no cure. He used to listen to too much radio humor in his younger days and it has grown into him. He will attempt to minimize the puns, however, and stop himself, if he is awake at the time the pun is written. You'd be surprised how many times he's read over these paragraphs after they are in print and exclaimed, “Now how could I have written such a thing!”—but there it is staring him in the face. Miss Kidd's name, we cheerfully announce, will be free from puns in the future. One of Ackerman's favorites is: “If we had an earthquake, would Eagle Rock? No, but Hollywood.” In the east, we have heard whispered, “If I wear my New Jersey, what will Delaware? Idaho, Alaska.” Too subtle?—EDITOR.)

Serials and Staples

Editor, WONDER STORIES:

WONDER STORIES seems to be coming along better. I am glad to say that the lowering of the price has not had the same effect on the quality or the quantity as it did once before.

One thing wrong is that out of 102 pages of stories, about 60 were covered by the serial and as very few people (?) read a serial before they have it all, they only had 42 pages to read. Can't you do something about that? The stories that you did have, though, were excellent.

And now Mr. Frank C. Dannbacher, a word to you—Let us say that we live on an "electron" in an "atom" in a "molecule" of xy-beet, an element in your macro-world. Would not all of the atoms in the molecule (galaxy) have the same number of "electrons" (planets) "protons" (stars) etc. and would they not be all of the same size? According to the only sensible theory I have heard as to how the solar system was formed (proposed by Sir James Jeans) there are very few solar systems like ours. Also the "protons" differ greatly in size. Another thing, many of the principles pertaining to atoms would not be true if applied to stars. I believe that there is a possibility that there is a macro-world but it can in no way be compared to an atom.

One more thing—you had better heed my warning and discontinue the use of wire staples, for soon we shall put our dictator, Bob Tucker, on the throne of the United Countries of Earth and then it will mean death to use or to even own wire staples. You shall see,

FRANCIS DEDOOGES,
Fort Douglas, Utah.

(When a serial takes half the magazine, it provides you with more to read that month the serial ends, if you save the installments, so you make up for the lack of short stories in the long run. Furthermore, long stories really prove the most interesting, as a general rule, because they allow you to follow a particular set of characters long enough to really become acquainted with them and become real people in your mind.

If you do not like to have staples in the magazines, you SPWSSTFM members, we suggest that you remove them the moment you receive it and mail them back to us. Our Free Staple Store for the competing organization will be a great favorite with some of our readers.—EDITOR.)

"Aussie" Speaks

Editor, WONDER STORIES:

How few letters in the "Reader Speaks" are effulgent with appreciation and constructive, helpful, criticism? The majority appear to be denunciatory, filled with potty declamation like the whimperings of spoilt children. Were I editor, I should take great pleasure in attaching to such letters comments both caustic and withering.

Here in Sunny Queensland, there are only two science-fiction magazines obtainable, and the supplies are very irregular outside of Brisbane. With what avidity then must those, who, like myself, are interested in science and science-fiction, and not always within easy reach of the capital city, devour, assimilate and digest all stories of the type, whether of good or medium quality? Indeed, no editor worthy of the name would publish a story without any literary merit whatsoever. Surely something of educational value can be found in every story, however bad it may appear. Anyhow, that is how I find it. We all can name our favorite authors and best-like stories, and plead for something nearer our individual ideals; but then ideals of any kind, methinks, are apt to be uncertain and changing in detail, and have a habit of being unattainable.

My friends and I buy up all science publications available; but we are agreed upon one point—that Gernsback publications are in every way the best. Certainly we find the editorial and "Science Questions and Answers" by far the most interesting in WONDER STORIES, and long for more pure science.

I should like to hear from any members of the SCIENCE FICTION LEAGUE resident in Queensland, for I hope soon to become a member, and maybe later on to form a Chapter, if there is not one formed already in Brisbane. There is great work to be done here towards popularising science-fiction, and more talking pictures of the type would be an invaluable help. Indeed, those so far shown have been well received.

In conclusion, may I say that, according to some

of Brisbane's leading booksellers, Science Fantasy magazines are fast ousting Detective and Wild-West magazines from the pride of place as best sellers. I congratulate you on your progressive policy, and am more than grateful for all the pleasant hours your magazine has given me.

VAROW RASCHER,
Brisbane, Australia.

(We feel that everybody is welcome to his own opinions, though we often wonder why some of the authors of scathing letters read the magazine in the first place. This is a free country, however, and free speech runs rampant. The open voicing of opinions is really a boon to progress—it creates arguments that often result in something new and advanced. Fans do not often get away with radical ideas, however, without a verbal fight with other fans. It is a poor policy for any editor to create ill-will by "slamming" his own readers, when he probably deserves most of the "slamming" himself.—EDITOR.)

From a "Ham"

Editor, WONDER STORIES:

By gosh! That's what I call a gyp. I was all ready to write the YL, whose missive appeared in the August issue, a letter (ahem) when, curses, I discovered that her complete address was not given.

Seriously, though, why do you not publish the complete addresses of these publicity hunters ???

By the by, in glancing over the list of proposed Chapters, I noticed that for some reason or other you had failed to list the San Mateo part of the League. How come? Is it that you don't want a San Mateo chapter, or did you just forget it, or snip'pin'?

Now to the stories: "The Reign of the Reptiles"—so my great-great gran'pappy was a snake in the grass, eh? Oh, well, the story was very good anyway. How's about a sequel?

"The Branches of Time." Zowie, what a story!!! So a person could travel into the past and change it, could he? Well, I guess I'll go back to Atlantis and prevent its sinking into the sea. Just think. Our world would probably be a couple hundred years ahead. Some fun.

"The Worlds of If." Another delightful story by Weinbaum. Suppose I had been born a girl!!! I guess I'll have to throw together one of van Manderpoot's "Subjunctorials" and look up the results. Now, but just a minute, Stan, I'm not finished. When do we get another "Tweel" story?

Hurray, "The Green Man of Graypee" is back. Hiyas, toots. I'm still waiting for the last part before I commence reading this serial, for suppose I were to read the first two parts and then "kick off"?? Then I wouldn't be able to finish it, unless the drug stores in heaven (or down below) carry WONDER STORIES, which I doubt.

What say there, Bob? Did you receive my donation to the SPWSSTFM? I hope so.

I agree with Mr. J. Dockweiler. Why not sprinkle the letters of readers with comments as Harry Bates used to? His "sprinklings" were as enjoyable as any of the stories. How's that for a "commercial," Mr. Bates?

Am glad to see that you finally evicted the "Sex" ads. Now how about those darned "No More Whiskey Drinking" ads? What do you think we readers are, anyway?—A bunch of "boozie" bounds? I believe you stated that you had nothing to do with the ads that appear in any of the magazines you edit. If this is so, I suppose there's nothing to do about it, is there?

PHILLIP MCKERNAN,
San Mateo, Calif.

(Your San Mateo Chapter has been put back into the Proposed Chapter List, SCIENCE FICTION LEAGUE department. Your second paragraph answers itself.

We do not "sprinkle" the readers' letters with comments for the simple reason that we place all the comments in these paragraphs. We feel that this is a better arrangement and keeps the letters complete in themselves.

You, like Virginia Kidd, are not satisfied with the riddance of the sexy ads. You too should learn the story of the fisherman and his greedy wife who wanted to be queen of the universe.—EDITOR.)

Mistakes on the Cover

Editor, WONDER STORIES:

I've got to apologize, old bean. I was thinking nasty thoughts about you. Glaring and gnashing my

teeth and swearing vengeance. All that sort of thing. It's because of this letter business. Can't really blame you for what you said, I suppose. It must have looked as though I wrote the bloomin' thing I didn't, though. If I wanted to make a damn fool of myself, I could think of a dozen more original ways.

I'm glad you published it. Gives me a couple of things to work on. It must have been written by someone who knows me. I say this because when I'm among my friends, I'm always bragging of my British ancestry (on my mother's side); and, I did try to get a job in a power-house, polishing brass-work. So, thanks again for printing it.

By the way, I'd have written sooner, but various things, among them lack of time, a broken typewriter, and a rather bad sunburn, prevented me.

Er, I don't know if I should say anything, but there was a mistake on the June cover (I think). The story was supposed to take place many years ago, wasn't it? If that's the case, Paul's wrong in drawing a dial phone. I may be, and probably am, in error about this. If I am, let me say that there's no malice intended. "Sell in fun."

I liked the July cover and title page. Nice, neat, and business-like. Good work, Charley. There's a question I want to ask you. Why is it always the western hemisphere that's represented in such pictures as the July cover? Is it because that's the easiest to draw? I'd appreciate it if you'd clear me up on this.

The only good story in the August issue was "The Worlds of If" by Stanley G. Weinbaum. He wrote "Pygmalion's Spectacles," didn't he?

J. DOCKWEILER,
Queens Village, N. Y.

(The person named Martindale who uses your address, your typewriter, your stationery, your SFL Member number, and even a 100% copy of your writing style, is certainly playing a very clever trick on somebody.

We have presented Paul with a latest edition copy of "The Dial Phone—It's Past, Present, and Future," in order to impress upon him the fact that they did not have dial phones thirty years ago. Now we're reading it ourselves so that we do not let slips like that get by any more. If the artists or editors ever slip up, the readers are bound to discover it, but then, of course, the damage has already been done.

The western hemisphere is usually shown in drawings of the earth because it is easily recognized by our American fans, which make up the greater part of our readers.

Stanley G. Weinbaum was the writer of "Pygmalion's Spectacles."—EDITOR.)

What Is a "Gadzeek"?

Editor, WONDER STORIES:

I have been reading science-fiction for several years; I have followed its slow (until recently) advancement through these hectic times from pure trash to pure literature. Then came your new policy. Well, what else is there to say other than it "speaks for itself"?

Then you find and give us Mr. S. G. Weinbaum with his delightful short stories—if we could only have an issue written entirely by him!

As for Master Paul—there's none better!

Mind answering a question, Mr. Ed? What's become of that darling Dr. Snooks, and (of more recent mention) the good old Baron? What say Mr. Gernback?

Finally, please heed the suggestions of Bob Tucker in the June issue, especially about the likes and dislikes. They are just what a good many fans think but don't say. By the way, Mr. Tucker, we (the hon. Editor and I) are just dying to hear your description of a Martian Gadzook. Must be a charming fellow, eh, what?

I think I've said enough for one letter, except that I wish you the greatest success.

MARK CAPUANO, CH. E.
Member 603, SFL
Worcester, Mass.

P. S.—I'm modest. Can't say what I think of the LEAGUE.

(Dr. Snooks has snook away again without leaving a trace and an urgent search is being made for him—for the safety of the American citizens—from the

rock-bound coast of Nebraska to the sunny shores of Kansas.

We are glad that you see the effects of our new policy. We still call it a new policy, though it has been in force two years, for it consists of a search for new stories.

Someone told us that the word "gadzook" is a cryptic name and that you should place the letters in the word backwards, to find the clue, omitting every fourth one and putting the remainder upside-down over a picket fence. Mix well and serve with tea biscuits.—EDITOR.)

"Best of the Year"

Editor, WONDER STORIES:

Have been late reading the "Waltz of Death"—but just finished it and think it is one of the finest—if not the best—stories I have ever read or you have ever printed. Perhaps it was my own mood, but I thought the atmosphere of the story was very ghastly, in the literal sense of the word. I loved it.

Is it too late to compliment you on "Pygmalion's Spectacles"? We are waiting for the series of tales by Weinbaum which you promised us.

Pragnell is such a favorite of mine—he has written such excellent fiction—that I can hardly believe you when you say—"but never before has he written anything to compare with this classic novel" . . . in the blurb for "The Green Man of Graycey." But I can agree with you when you assert it will be voted the best novel of the year.

The rubber stamp, which Darrow has proposed, comes into use on this letter. It's in sincerity, though: PLEASE FRAME THE COVER PICTURE BY PAUL FREE FROM WORDING—JUST ONCE!

Thank you.

STUART AYERS,
Lewiston, Idaho.

(In answer to your second paragraph, it is never too late to compliment. We are glad that you find so many of our stories to your liking. We never rate a story better than we really think it is. If we state that a story is very good, we don't mean that there are none better—but when we say that there are none better, we mean that it is more than just very good.

Your rubber stamp—or rather, the impression of it—looks very good. Perhaps some day we can do something about it.—EDITOR.)

MOVIE REVIEW

TRANSATLANTIC TUNNEL by Gaumont-British.
Hero: Richard Dix as "McAllen." Heroine: Madge Evans as "Ruth."

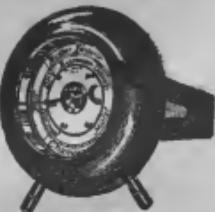
McAllen, a mechanical engineer who had constructed a tube between England and France in 1940, now proposes (around 1950) the building of a tunnel under the Atlantic, the greatest mechanical achievement in the history of man. According to the Prime Minister of England (portrayed by George Arliss) and the President of the United States (Walter Huston), this would be a powerful move to bring together the English-speaking people of the world into closer and friendlier relationships. McAllen's fantastic proposal, supported by the development of a radium-drill to speed up work and a new metal to withstand the tremendous sub-sea pressures, is finally accepted by a group of his capitalist friends in England, and the tunnel is started from both sides of the Atlantic. Several years pass and the tunnel is well under way. The workers approach an underground volcano and are forced to go around it, the delay and cost of which almost causes the backers to back out. McAllen is brought out of the tube for a while to America in order to have publicity plaster him all over the front pages, arousing renewed public interest and raising stock prices. All of his time being taken up by the tunnel, his wife is neglected—and to add to this, he is tied up, unwillingly, to a society woman (Helen Vinson) who is really in love with him. His wife gets the wrong impression and goes to work in the tunnel herself, nursing the men who had fallen from "tunnel sickness." She contracts the disease and goes blind. She leaves her husband, who never learns of her blind-

(Continued on page 894)

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MOVIE REVIEW

(Continued from page 888)

ness until near the end of the picture when they are re-united. McAllen's own son is killed in the tunnel when "Section K" drills into a sub-sea volcano. After much complication of plot, the tunnel is completed and everyone lives happily ever after, McAllen's wife regaining her sight. The picture ends with a great international celebration of the eventful opening of Transatlantic Tunnel.

From a science-fictionist's view-point, this production, even better than "Invisible Man," is A-1. Though the leading characters are sometimes over-emphasized, a common British failing in the movies, there are plenty of super-scientific scenes of the future that will catch the breath of any science-fiction fan. Here we see, in real life, many of the things we have been reading about for so long—television, future cities, super-stream-lined automobiles, and a hundred-and-one other little details that give the production a real world-of-the-future aspect. The characters' natural nonchalance in the presence of these wonders, which are common to them, give the picture a very realistic touch. The scenes in which appear the constructing of the gigantic tunnel, with feverish, magnificent activity and unexpected occurrences will meet with particular approval. The scenes of fiery destruction caused by undersea volcanoes with the accompanying clangor of emergency bells and piercing of whistles, the mad stampede of the terrified workers, will live long in your memory. The technical effects are superb and an atmosphere of stupendous achievement is forever in our presence.

By all means, do not miss "Transatlantic Tunnel" if you want to see a picture that is a perfect personification of science-fiction.

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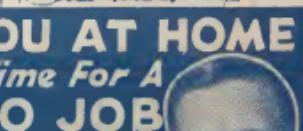
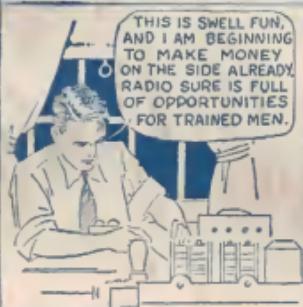
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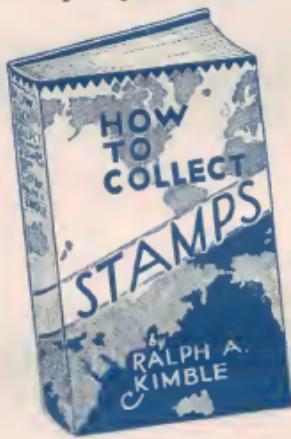
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